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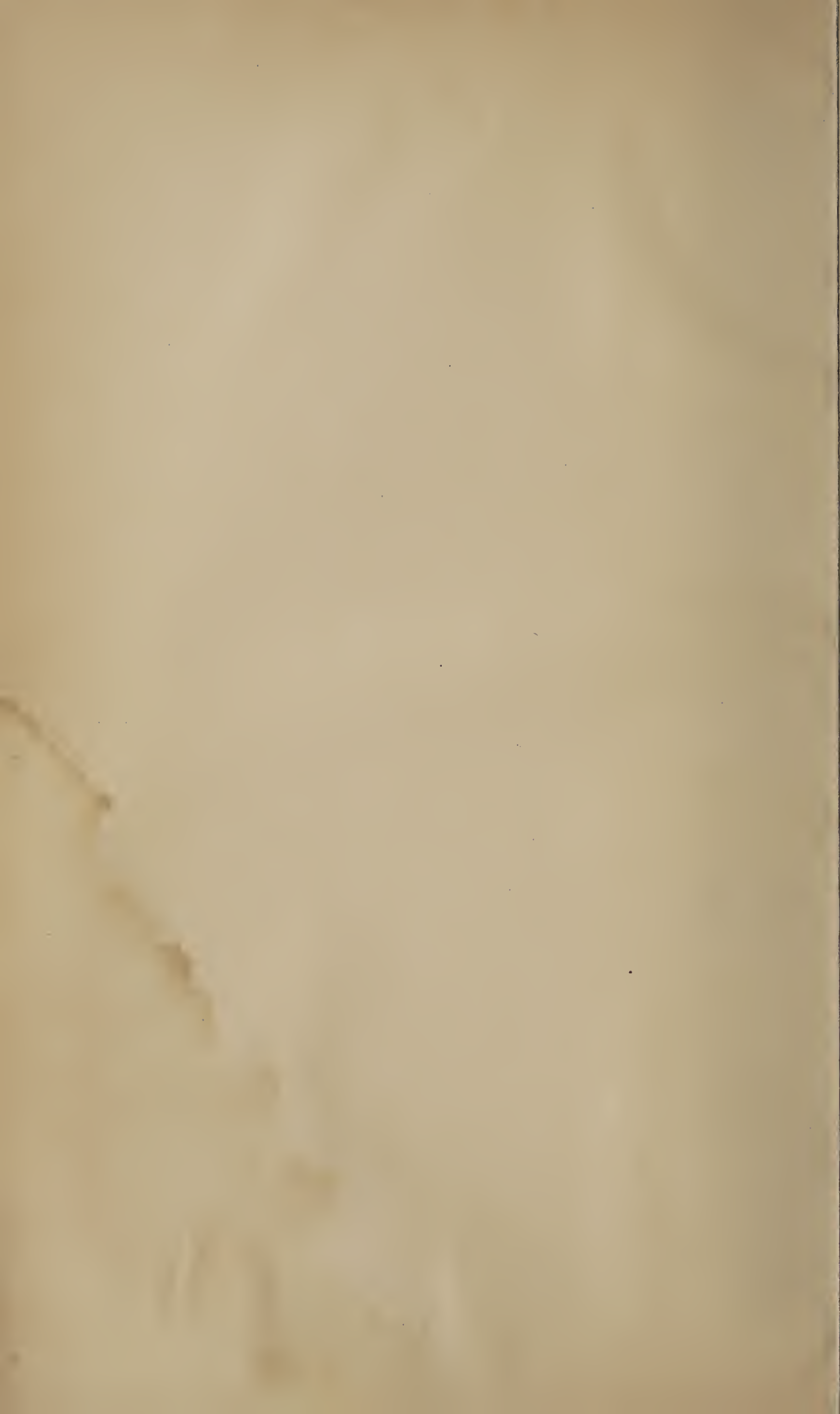
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Nectarine... 1. Rivers' Pine apple 2. Rivers' White

THE
Florist and Pomologist:

A PICTORIAL MONTHLY MAGAZINE

OF

FLOWERS, FRUITS, AND GENERAL HORTICULTURE.

CONDUCTED BY

THOMAS MOORE, F.L.S., AND WILLIAM PAUL, F.R.H.S.

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THE

FLORIST AND POMOLOGIST.

NEW VARIETIES OF NECTARINE.

WITH AN ILLUSTRATION.

NOT the least of the benefits conferred on British Horticulture by the veteran horticulturist, Thomas Rivers, has been the raising of numerous choice varieties of fruits; and amongst these Mr. Rivers' New Peaches and Nectarines stand prominently forth as acquisitions of the highest value. We have already given an illustration of Lord Palmerston Peach, a variety which we owe to the establishment at Sawbridgeworth, and we now figure two New Nectarines from the same source, from specimens which have been obligingly furnished to us by the Rev. W. F. Radclyffe.

The PINE-APPLE NECTARINE (fig. 1) is described as "large, nearly oval, pointed; colour, deep orange and crimson, very rich; ripens from a week to ten days later than the Pitmaston Orange; the richest of all Nectarines." The sample from which our figure was made was about middle size, oval, pointed, the skin intense purplish-crimson, passing into crimson on the parts less exposed. The fruit was sent unripe for facility of carriage, but Mr. Radclyffe speaks in the highest terms of its quality. The glands of the leaves were round.

RIVERS' WHITE NECTARINE (fig. 2) is said to be "large, melting, juicy, and vinous; requires a warm, dry soil; well adapted for pot-culture under glass or forcing; it is earlier than the New White." This variety forms a striking contrast to the high-coloured sorts in a dessert. The fruits we examined were roundish, and of a pale greenish straw-colour, the flesh being pale-coloured throughout, tender, and melting, with abundance of brisk, vinous juice. The leaves were furnished with prominent sub-reniform glands.

Remarking on these and others of his novelties, Mr. Rivers observes that "Lord Napier, a very fine early kind, and Albert Victor, Victoria, and Prince of Wales, all fine sorts that succeed the mid-season kinds, are likely to bring on great changes in our Nectarine culture, by prolonging their season. I think I may say with some confidence that the Pine-apple and the Large Elruge, added to the above, will form a group of fruit not easy to be matched. Fruit of Albert Victor and Victoria have been grown $8\frac{1}{2}$ in. and 9 in. in circumference, and the Pine-apple, a most beautiful kind, of nearly the same dimensions." Of the latter

variety, which was raised from the Pitmaston Orange, Dr. Hogg observes :—" It has the same yellow flesh as its parent, and is much richer in flavour, in that respect partaking somewhat of the fragrancy of that of the Pine-apple."—T. M.

NEW PLANTS OF 1871.

COMMENCING with the hardier series, we purpose here to pass in review some of the more important acquisitions of the year which has just passed away. The number of the New Plants which annually come to the front is really astonishing, and we can do no more than briefly indicate those which in our opinion are the most desirable amongst them.

In the group of Hardy Evergreen Trees and Shrubs we find *Quercus striata*, a Japanese tree, half-hardy, or possibly hardy in sheltered places. This is pyramidal in habit, and its ovate lanceolate, toothed leaves are distinctly banded with oblique lines of green and gold. The French gardens have *Wellingtonia gigantea pendula*, a drooping-branched variety, said to be well-marked and ornamental. The *Juniperus chinensis aurea* is probably one of the finest of recent evergreens, being hardy and free-growing as the type, and well-marked with a thoroughly fixed golden variegation. Amongst Deciduous Trees *Maackia amurensis* is the most decided novelty. It comes from the valley of the Amoor, bears pinnate leaves, and produces long, dense, spike-like racemes of white papilionaceous flowers. The ever-blooming *Robinia Pseud-Acacia semperflorens* of French gardens, which is said to continue flowering on from April till autumn, must be a fine ornamental tree. *Albizzia rosea*, a North American tree, hardy in Paris, is very floriferous, and its heads of long crimson stamens are very showy. Then we have two more of the pretty Japanese Maples in *Acer palmatum ornatum*, and *A. palmatum crispum*. Passing on to Deciduous Shrubs, we find *Cerasus Sieboldii roseoplana*, a beautiful shrub with pendent branches, and double rose-coloured flowers; and *Cerasus pendula rosea*, slender and drooping, the branches profusely laden with blossoms of a delicate pink, both Japanese; *Rhus Osbeckii*, also Japanese, with handsome pinnate leaves having winged rachides; two Mock Oranges—*Philadelphus rubricaulis*, and *P. parviflorus*, both Chinese, and said to be of ornamental character; *Rhododendron (Azalea) molle*, a fine Japanese shrub, with bold deep orange-yellow flowers, and likely to be the parent of a numerous progeny of garden varieties like the hardy Azaleas of America; *Rosa rugosa*, at first called *R. Regeliana*, a dwarf and very distinct Japanese species, with large crimson flowers like single Pæonies; and *Lonicera Perichlymenum aureum*, with golden variegated leaves.

The Hardy Perennial group has yielded the following subjects of merit :—*Primula japonica*, the finest plant of the season, with its tall, whorled scapes of rich magenta blossoms; *Linum campanulatum*, a very much improved *L. flavum*, from the south of Europe; *Lithospermum petræum* and *L. Gastoni*, also European, two dwarf plants, with charming blue flowers; *Androsace carnea eximia*, in which the umbellate flowers are rosy-purple; *Baptisia leucophæa*, with trifo-

liate leaves, and long reclinate racemes of white papilionaceous flowers; *Saxifraga Maweana*, a Morocco plant, with large white flowers, and proliferous bulbils; *Saxifraga valdensis*, a little Alpine gem, of minute growth, with large white blossoms; and *Thymus citriodorus aureo-marginatus*, a beautiful yellow-edged dwarf Thyme, suitable for bedding-out.

Annuals are few in number. The most remarkable is *Amaranthus salicifolius*, a half-hardy species, adapted both for in-door and out-door decoration, of pyramidal habit, with pendent, narrow, charmingly multicoloured leaves, and certainly one of the best plants of the year. To this may be added the hardy *Collinsia violacea*, with white and violet flowers, and compact habit; and *Gilia liniflora*, like a white-flowered flax.

New Ferns are not numerous. *Dicksonia Sellowiana*, a noble Brazilian tree fern, has been introduced to the Belgian gardens. *Humata*, or *Davallia Tyermanii*, is a charming evergreen stove fern, from West Africa, and has a freely-creeping silvery-scaled rhizome, and small, deltoid, tripinnate fronds. *Elaphoglossum Herminieri*, the Eel-fern, though having only simple fronds, forms a good new stove fern for baskets. *Pleopeltis irioides cristata* is a well-crested form of a well-known species. *Trichomanes auriculatum* is one of the lovely creeping-stemmed Javanese Film-ferns, with long, narrow, transparent fronds. *Lycopodium dichotomum*, *L. mandioccanum*, and *L. taxifolium*, are three interesting species of Club-moss; while *Selaginella rubella* is a creeping-stemmed species of the same order, with reddish-tinted leaves.

Succulents have been chiefly confined to Agaves, of which very ornamental genus, many new, or at least unfamiliar species, have been brought forward. The best of these were *Agave Celsiana albida*, *dealbata compacta*, *imbricata*, *ixtlioides*, *Simsii*, *elegantissima*, *Mescal*, and some of its varieties, *Regelii macrodonta*, *rotundifolia*, and *Verschaffeltii variegata*.

Amongst bulbs are some new Lilies, a family now happily engaging the attention of cultivators. *Lilium Washingtonianum* is one of the finest of them, growing 3ft. to 5 ft. high, with many large purple-tinted, white, sweet-scented flowers. The Eastern Asiatic *L. Maximowiczii tigrinum* has lovely orange-red flowers, spotted with purple; and *L. Roezlii*, from the Rocky Mountains, is an ally of the beautiful superbum. In *Gastronema sanguineum flammeum* we have a lovely dwarf greenhouse bulb, with large funnel-shaped rosy-crimson flowers. *Nerine pudica*, of Habranthus-like aspect, also a greenhouse plant, has white flowers streaked with red. *Gladiolus Saundersii* is a very handsome South African species allied to *G. psittacina*, but with the decurved flowers scarlet and white. Finally, *Xiphion filifolium* and *X. junceum* are two bulbous Irises of showy character, the first with rich violet-purple, the last with golden-yellow flowers.

Two white-flowered Bouvardias, *B. Davisoni* and *B. Vreelandii*, both apparently sports from the variety called Hogarth, are choice acquisitions in this useful decorative genus, which requires warm greenhouse treatment. *Encephalartos Vroomii*, in the way of *E. villosus*, is a fine greenhouse cycad. *Tacsonia speciosa*,

with carnation-coloured flowers, is a remarkably handsome greenhouse climber. These are the more important acquisitions in the Greenhouse section.

New Stove Plants are, as usual, very abundant, and we can only glance at a few of them. In the flowering section we find the following specially worthy of note :—*Dipladenia insignis*, the finest of all the *Dipladenias*, with very high-coloured rosy-carmine flowers. *Gloneria jasminiflora*, a Brazilian evergreen shrub, with corymbose panicles of long-tubed freely-produced white flowers. *Ixora Colei*, a splendid exhibition plant, with immense heads of pure white flowers. *Ixora amabilis*, a remarkably free deep orange-coloured variety. *Begonia Chelsoni*, a hybrid from *boliviensis*, with bright orange-tinted red flowers. *Bomarea chontalensis*, a grand stove climber from Nicaragua, with waxy rose-coloured and yellow flowers blotched with brown, one of the last contributions of the lamented Seemann. *Aristolochia cordiflora*, another stove climber, from Mexico, with creamy purple-blotched flowers, having an immense cordiform limb. *Æchmea Mariæ Reginæ*, *Vriesia corallina*, and *Bromelia Fernandiæ*, three grand Bromeliaceæ, the first with great rosy-pink bracts, and blue flowers, the second with green flowers in the axils of distichous purplish-red bracts, the third with a great globose head of numerous recurved cinnabar-red bracts, subtending greenish-white flowers.

Stove foliage-plants again are very numerous, the best being :—*Paullinia thalictrifolia*, a woody Sapindaceous climber, with tritermately pinnate leaves, like fronds of some elegant *Adiantum*. *Sphærogryne imperialis*, a noble Melastomad from Peru. *Nepenthes Sedeni*, a pretty hybrid pitcher-plant. *Maranta Mazellii*, a handsome species, with broad rotundate leaves, marked by two grey bands. Several *Dracænas*, as *D. amabilis*, with green leaves and pink and white variegations, far superior to *Guilfoylei*; *D. Wisemannii*, with bronzy, red-margined leaves breaking out into white; *D. splendens*, a dwarf, dense-growing form, with short, broad, recurved bronzy leaves breaking into rosy carmine; and *D. magnifica*, a very handsome sort, with erect broad bronzy leaves, margined with red, and having a pinkish bloom. Several *Arads*, as *Dieffenbachia imperialis*, bold-leaved, dark green, with gray rib and distinct yellow spots; *D. Bausei* and *D. Bowmanni*, both of stocky habit, yellowish green blotched with dark green, the former also spotted with white; *Alocasia Marshallii*, like *Jenningsii*, but with a central silvery band added; and *Xanthosoma Lindeni*, with erect sagittate-hastate, deep green leaves, the ribs and veins of which are ivory-white.

Amongst exotic Orchids, we can only mention these :—*Phaius Marshalliæ*, a charming terrestrial species, with large white flowers having a lemon-tinted lip. *Sobralia macrantha albida*, a variety with creamy-white flowers and rosy lip. *Oncidium aurosum*, with a crowded erect panicle of golden-yellow flowers, spotted with rich brown. *Epidendrum Frederici-Guilielmi*, a tall species, with short broad racemes of deep crimson flowers. The curious *Epidendrum Pseudepidendrum*, with bright green flowers, having a bright vermilion-orange lip. *Masdevallia Lindeni*, *M. Harryana*, and *M. ignea*, three beautiful dwarf cool-house species, the first with

the flowers brilliant violet-rose, the second rich magenta, and the third bright cinnabar. Finally we may record *Cypripedium Ashburtoniae*, a handsome hybrid form of Lady's Slipper, exactly intermediate between its parents, *C. barbatum* and *C. insigne*.—T. M.

NEW FRUITS AND VEGETABLES OF 1871.

AD. 1871 was not a fruitful year, so that our acquisitions in this department are not so numerous or important as usual. Still we have to record several novelties of no mean merit, and such as we may gladly welcome.

GRAPES, as usual, come most prominently before us. Our indefatigable friend, Mr. Pearson, of Chilwell, presents us with a batch of four, all of con-



W.C.S.

EARLY RIVERS CHERRY.

siderable promise. In *Dr. Hogg* we have an improved Duchess of Buccleuch: that is, improved as to size and constitution, the quality being the same, resembling that of the well-known Chasselas Musqué. *Abram Bass* is a fine, firm-fleshed, oval black grape, raised from Mrs. Pince's Muscat. *Chilwell Alicante* resembles the Alicante or Black Tokay, and has a fine rich pleasant flavour which the older variety does not possess. *Emperor of Morocco* is also a fine-

looking black grape, of very rich and pleasant flavour, raised from the Black Morocco. We must here also say just another word for Mr. W. Paul's *Waltham Cross*, which is one of the noblest-looking of late white Grapes yet produced.

Of PEACHES Mr. Rivers gives us a batch of novelties, some of which are of great merit. Especially we would note this of *Goshawk*, one of the richest mid-season peaches grown. Of others we may mention *Albatross*, *Condor*, *Golden Eagle*, *Merlin*, very rich. Of NECTARINES, *Darwin* and *Humboldt* are two fine acquisitions of the Stanwick class. We may also notice as a mid-season peach of remarkably fine quality the *Markly Admirable* of Mr. Knight. In APPLES we have no addition of note; neither in PEARS is there any very remarkable novelty. We may, however, invite attention to one or two which during the past season have proved of great excellence, viz., *Beurré de l'Assomption* and *Souvenir du Congrès*, both having the character of Williams' Bon Chrétien. In CHERRIES we have to add *Bigarreau Noir de Schmidt*, a fine black heart; and *Early Rivers*, a very fine large fleshy richly-flavoured sort of great repute. Let us hope that in a propitious season we may have more meritorious novelties to notice.

Coming to Vegetables, we find new names to be legion. It is here, however, always a difficult matter to decide as to what is truly a novelty or new variety, and what is merely a new name given, it may be, to a greatly improved stock, but still essentially the same. Our vegetables are improved, or kept up to the standard, by selection far more than by the efforts of the hybridizer or introducer, as in the case of fruits and flowers. PEAS, however, yield us real novelty. Mr. Laxton, to whom we have already been indebted for several important additions, is now about to outdo himself by giving us, all at once, six new varieties—to wit, *Superlative*, having great pods, like a broad bean, fully 7 in. in length, which, whatever its quality be, will be a glorious pea for exhibition; *Griffin*, early as Sangster's, of a deep grassy-green colour, a great desideratum in an early pea; *Popular* and *Omega*, two wrinkled marrows; *Evergreen* and *Conquest*, the former a smooth pea, said to be of fine colour when cooked, the latter a green wrinkled. In addition to this we have *Emperor of the Marrows*, from Mr. Williams; *White Gem*, *First Crop Blue*, from Messrs. Carter and Co.; *Best of All* (Maclean), from Messrs. Sutton and Sons, which last, if it prove true to its name, will be good indeed. One more must be noticed, viz., *Canadian Dwarf*, from Messrs. Finney, which is of great promise as an extraordinary cropper, and of fine quality; and there are still more candidates. Of ONIONS we have many claiming notice of late. At present we may allude to the *New Red Marzagole*, the *Neapolitan Marzagole*, and the *Red Mammoth Tripoli*, all very large, of the Tripoli type. Amongst CUCUMBERS there are also many aspirants, but the best which we have seen, is Douglas's *Tender and True*. For the lovers of large Cucumbers, we may indicate the *Marquis of Lorne*. In TOMATOS we have gained a good variety in *Earley's Defiance*; as among

LETTUCES we have also in the *Kingsholm Cos.* In RADISHES we have a welcome addition to our winter salads in the *Large White Californian*, no doubt of Japanese or Chinese extraction, introduced by Mr. Robinson, which grows to a large size, resembles a great white Sablons turnip, and is of good quality. Lastly, amongst POTATOS, we have so many to choose from, that we are at a loss which to select: *Lee's Hammersmith Early Kidney* is very fine in appearance, but it would be invidious to name others from amongst so many. It is satisfactory to know, and highly gratifying to feel, that the past season, although an unpropitious one for gardening generally, does not show any falling-off of energy amongst gardeners, but a quiet progressive improvement.—A. F. B.

BROCCOLI : ITS CULTURE AND VARIETIES.

IN penning a few notes on this esteemed vegetable, I have little new to offer, but merely purpose to describe a practical method of treatment, which if carried out, cannot fail to give satisfactory results. I may mention that Broccoli in some shape, and Mushrooms in plenty, are two things indispensable at Burghley. Just now (December) we have a good stock of Walcheren Broccoli, well covered with fern—the best of all protectors for outside things, to be followed by Snow's Broccoli, also covered up.

For my first crop of Walcheren, I sow the seed about the middle of August, and plant (under hand-lights) in the first week of October all the larger plants, reserving the small ones for three-light boxes, which gives me a succession from the first week in June, until the last in July. These are followed by a pinch of seed sown inside in February, which comes into use in August. In March we make a sowing on a south border, and another the first week in May; and by picking out all the best plants first, leaving the smaller fry for the last batch, we are enabled to keep well on until Christmas.

The land cannot be too highly tilled for Cauliflowers, trenching and manuring being the order of the day; but for Spring Broccoli the case is different. We want good stocky plants. They are the following crop after the early potatoes are cleared, and the firmer the land the better. We strike the lines 3 ft. apart, and plant 2 ft. 6 in. apart in the row, one man making the holes with a crowbar, and another dropping in the plants. The only planting required is to well wash the dry earth into the holes, filling them level with the ground; and they seldom require any more water. We never lift or lay in our Broccoli, the plants being sturdy and hardy, but in severe weather we cover the whole with fern, the wind, rain, &c., washing it down to the fatal spot, the neck, and thus preserving them.

The following varieties keep us supplied with Broccoli nearly the whole year round:—Snow's Winter White; Osborn's, a really good thing; Early Malta; Frogmore Improved, for early spring, say January to April, when we have Elletson's, White Protecting, Hibbie's Royal Alfred; and for latest of all, Cattell's Eclipse, the best of all Broccolis for late work.

As an illustration of Broccoli, growing in firm land, I may mention that when

taking charge of these gardens three years back, I found a quarter which had been occupied by Strawberries for eight years. The crop of fruit being cleared, I had the plants all chopped up close to the surface, the land, which was as dry as snuff, raked over, and the plants planted in the manner above described; and I never saw so fine a piece of Broccoli stand before the sun. High manuring and deep digging give foliage three feet long, but this is not wanted. What is required, is to give plenty of room, and grow the plants stiff and firm. I sow my early Broccoli the first week in April, and the late the first day of May.—R. GILBERT, *Burghley*.

FLOWER-GARDEN MANAGEMENT.—JANUARY.

WHEN the weather is open, this is a favourable season for making alterations in the Flower-Garden and Pleasure-Grounds. Where there is much of this work to be done, it should be pushed forward with all possible despatch, so as not to allow it to interfere with spring work. We often have very severe frosts during this month, and from my own experience I believe more things are injured or killed during January than during the other months of the winter. Therefore, if any trees, plants, or bulbs are insufficiently protected, they should at once be made secure. Plant *Roses* if mild weather occurs, having previously well prepared the ground. Towards the end of the month the more hardy varieties of Rose may be pruned. Look occasionally over *Pansies*, *Hollyhocks*, *Polyanthuses*, *Carnations*, &c., and prepare for *Ranunculuses*, which may be planted towards the end of the month. Lay turf in open weather; plant edgings; and clean, fresh gravel, and roll walks.

IN-DOORS.—*Greenhouse plants* will require careful attention during this month. In severe frosts fire-heat will be necessary, but guard carefully against keeping up a high night temperature, which would do much injury to the plants. In dull weather but little water will be required, but when fires are used the plants must be carefully examined at short intervals, to see that none are suffering for want of it. *Camellias*, *Azaleas*, *Correas*, *Acacias*, and other plants coming into flower, should be placed at the warmest end of the house. *Pelargoniums* that are well rooted may now be shifted, to encourage free growth; thin out the branches and keep them neatly trained; give them plenty of stage-room, and turn them frequently. *Cinerarias* and *Calceolarias* should have a general shift; give them air freely in mild weather. *Pelargoniums* of all kinds, intended for bedding out, that have been wintered in pots and frames, should now be potted off and put into vineries or peach-houses at work.—M. SAUL, *Stourton*.

CORYNOSTYLIS ALBIFLORA.

THE genus *Corynostylis* is not yet familiar in our gardens, though known in herbaria. It belongs to the family of the Violets, and consists of scandent shrubs, furnished with alternate leaves, and racemes of long-stalked, showy flowers, the lower petal of which is furnished with a large horn-

like spur. The species now figured, the *C. albiflora* of Linden, which was introduced from Pará by Mr. Wallis, and is offered for sale in Mr. Bull's *Catalogue*, is of semi-climbing habit, and has ovate elliptic leaves of moderate size, and white flowers of curious form, dangling gracefully on long thread-like stalks. These flowers are abundantly produced, and looked at in front show their relationship



CORYNOSTYLIS ALBIFLORA.

to be with the Violets, while in profile their form reminds one of some of the long-spurred *Tropæolums*. It will require the temperature of a stove, and will prove a very interesting addition to our collections of stove plants. Like the *Ionidiums*, it should be grown in well-drained, sandy, and rather peaty soil. It is said to have been found about the borders of the forests which clothe the banks of the Amazon.—M.

ON CROSS-BREEDING PELARGONIUMS.—No. I.

THE artificial fertilization and propagation from seed of the Scarlet Pelargonium, to obtain new and improved varieties—the last division of my subject—I had hoped to have been able to have treated upon in one paper, but I find it to be too comprehensive to admit of justice being done to it within the limits of my previous contributions, and I must therefore subdivide it. An exhaustive article upon the hybridization of the Pelargonium family would contain so many points of interest, and subjects for theoretical discussion, that a volume would scarcely contain it; therefore I purpose to confine my remarks to artificial fertilization, and to adhere closely to the practical part of the subject, giving only the results of my observations, which I hope may be useful to others carrying on similar experiments.

Presuming that I am addressing myself to the amateur, and probably to the novice, in cross-breeding, I purpose giving in detail the method I adopt. In the first place, then, I would urge upon all who undertake even so trivial a work as the fertilization of a flower, to do it with method and preconceived design, to note the means employed with scientific precision, and to observe with accuracy the results; for should the data and experience so obtained prove of no ulterior value, they will, at any rate, afford many a useful hint to the manipulator for his onward guidance, and immensely enhance the pleasure as well as the interest of his undertaking.

To commence breeding for new varieties of the Pelargonium, whether for foliage or flower, the first thing requisite is to possess the best varieties for the purpose. In my former papers I have endeavoured to indicate those varieties which in each class I considered the best, at the same time pointing out their qualities and deficiencies, also giving my idea of the improvements desirable to be attained. But I would have every one form his own ideal standard of perfection, and aim to attain to it.

The next requisites are the tools to work with. I use a stool of convenient height on which to place the plant to be operated upon, and a small wooden tray with divisions, containing a fairly powerful magnifier (I employ the eye-piece of an old microscope), a narrow-bladed, sharp-pointed knife, fixed in a long, narrow bone handle, a pair of sharp-pointed (grape) scissors, a small pair of sharp-pointed, well-adjusted forceps, a kind of straight blow-pipe, an old-fashioned watch-glass, two or three camel-hair pencils, a few tiny bottles fitted with air-tight corks, a number of small slips of white card, pierced at one end with a piece of fine wire two inches long passed through and secured by a twist, a number of small squares of white demy paper, four note-books, and a lead pencil.

I will now suppose that I have decided upon crossing two plants for an ideal result, and that the mother or intended seed-bearer is before me, and my tools at hand. I first proceed to emasculate the pip or pips whose corollas have expanded, by removing the stamens by means of my sharp-pointed knife, taking

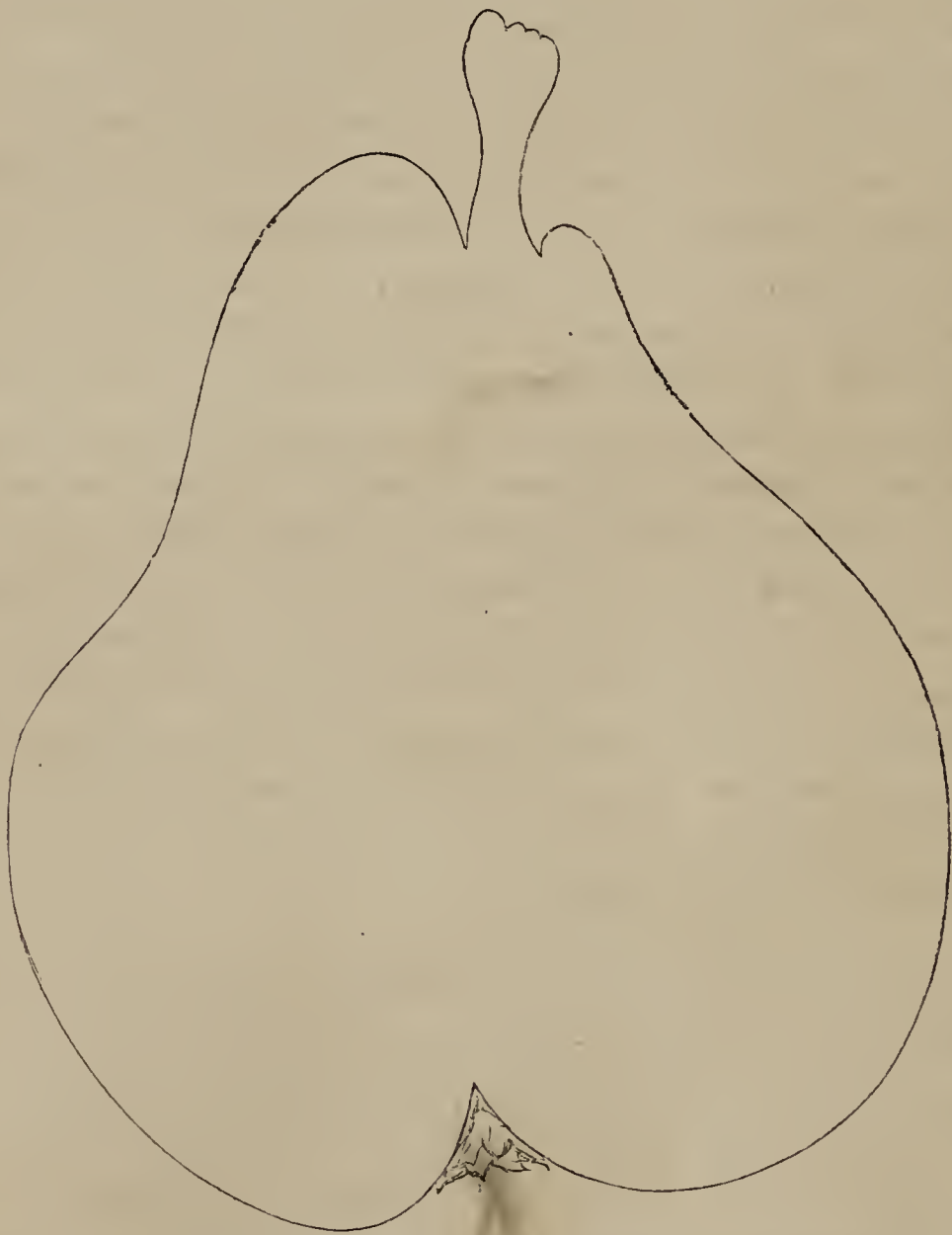
care not to injure the pistil ; this should be done before the pollen-sacs burst, if possible, but certainly before the pistil has become expanded. Should the pollen have been thrown out, it will be necessary to remove every grain that may be scattered by means of a camel-hair brush ; to make doubly sure, I also blow violently through the blow-pipe direct upon the pistil. I then examine the pip with my glass, to see if I have thoroughly effected my object. My next proceeding would be to enter in note-book No. 1 (under number) the name of the plant, viz., the seed-bearer, also that of the intended father or pollen plant, together with a remark as to the result I expect to be produced ; I then take one of the little slips of card, and pencil upon it the corresponding number to my entry, and with one twist of the wire it is fastened round the stalk of the truss.

I have supposed the pistil up to this period to be an erect and straight column, and consequently incapable of receiving fertilization ; by the morrow, or perhaps not until the following day, this column will have become split into five segments for one-third of its length downwards ; or, in other words, the pistil will have expanded, and the stigma or upper surface of each segment presented itself for impregnation. As soon as possible after this takes place the pollen should be applied, but before doing so I examine the stigma with my glass, to see that I have not been forestalled by insect intervention, and that the stigma is in a perfect state of virginity. My next step is to detach, by means of my knife, some anthers that have recently thrown out their pollen from a pip of the intended father, catching them in the watch-glass, which should have been carefully wiped to ensure that there are no remains of previous pollen ; I then take up one of the anthers with my forceps and apply it to the stigma, using the glass to see that I have completely covered its surface with the pollen. Some recommend that the pollen should be applied by means of a camel-hair pencil, but there is danger of extraneous pollen being used by this method, and hence I consider it is objectionable.

If I am short of the pollen I have been using, I should put any surplus anthers that I had detached into one of the little bottles (which must be perfectly clean and dry), carefully cork it, and place it in the dark until required ; but this pollen I should not use, if fresh could be obtained. In like manner I should endeavour to economize a pip or flower that I was very desirous of fertilizing. If, for instance, a day's neglect had permitted the expansion of the pistil with the anthers not removed, in which case the pollen-sacs would have burst, I should direct a sharp blast through the blow-pipe on the centre of the pistil. By this means I generally succeed in sending the anthers and pollen flying without danger of fertilizing the pistil ; but if upon examination I find a grain of the pollen has found its way to the stigma, I at once remove that pip with my scissors.

In most of the varieties of the *Pelargonium* the anthers burst and fall off prior to the expansion of the pistil, or the pistil stands up above and expands over the falling stamens, and consequently does not become impregnated except by some foreign agency ; but there are some varieties, especially those with petals

of a pink colour, or which possess weakly constitutions, where the pistil expands as soon as or even before the pollen-bag bursts, and in which also the pistil is frequently short, so that when it expands it is smothered as it were by the bursting anthers; these varieties are great seeders, each pip being fertilized by its own pollen. I would instance Christine as an example of this fact. I find bright, clear weather, and the hours of sunshine conducive to fertilization. If the pollen and the stigma were alike in a condition to impart and receive fertilization, the effects will in most varieties very shortly be manifested, by the falling of the petals of the fertilized pip.—JOHN DENNY, *Stoke Newington*.




ROBERT HOGG PEAR.

THIS fine melting Pear was introduced by me in 1869 from Angers, France, where it was raised by the eminent pomologist André Leroy. It fruited for the first time in 1868, and was named by him in honour of our greatest British pomologist, Dr. Hogg, and certainly does honour to both. It fruited here this season, but only two fruits came to maturity, and one of these got bird-pecked, and rotted before it was quite ripe. The other, from which the sketch and description were made, was a handsome and delicious fruit; rather above the second size, and of first quality. It was ripe the 20th of November.

The form is irregular and bluntly turbinate, a little uneven and bossed on the surface, much swollen at the lower end. The skin is rough to the touch, of a deep bronzy green, and nearly covered with marblings, tracings, and dots of greyish russet. The stalk is thick and short, obliquely set in an unequal-sided shallow cavity, by the side of a fleshy lip. The eye is medium-sized, half-closed, and set in a deep basin. The flesh is white, fine, and very melting, the juice abundant, sugary, and aromatic, with a fine pleasant vinous flavour and slight acidity. The tree grows well upon the Quince, and is peculiar in habit, having a fine tomentum covering the young branches, and grey dots of a raised oblong form on the bark. The foliage is large and handsome, and altogether it is a nice acquisition amongst our late autumn fruits.—J. SCOTT, *Merriott*.

FRUIT CULTURE.—JANUARY.

 HERE the soil is naturally good, and the situation favourable, most of our hardy Fruits can be grown to great perfection ; but as good soils and favourable situations are not general, the culture of fruit-trees has oftentimes to be carried on under difficulties. When this happens, great skill and experience are required to grow superior fruit. It is a waste of means to plant fruit-trees in inferior soils without thoroughly improving them beforehand—thorough drainage, trenching, and top-dressing with such composts as will improve the texture of the soil, being the means to be adopted. The preparation and improvement of the soil should be completed before fruit-trees are planted. Presuming that the ground has been thus prepared in the autumn, Fruit-trees may be planted any time during the month, in the absence of frost, if the soil be dry. Avoid deep planting ; spread the roots carefully out ; fill in the soil carefully amongst and over the roots, and press gently with the feet—do not try to settle the earth by shaking them ; cover the surface over with a good mulching of rotten dung, and secure standards to stakes. Generally this is too cold a month for nailing fruit-trees with advantage, but as the frosts of the last two months will in most places have prevented much of this from being done, no favourable opportunity of pushing on with it should now be lost. The pruning of Fruit-trees should also be proceeded with in open weather.

IN-DOORS.—Plants of *Pine-apples* that are swelling-off their fruit should have a temperature of from 65° to 70° by night, with an increase of 8° or 10° by day ; they should be well watered when they require it, and should have a tolerably moist atmosphere. If the spring fruiters and the succession plants have a bottom-heat of about 85°, with a night temperature of from 60° to 65°, and a little air whenever the state of the weather permits, it will be all that is necessary for them at present. The *Vines* started last month will now have broken and be advancing into growth, and should have an increase of temperature to about 60° by night and 70° by day, which will be sufficient until they are coming into bloom, when it should be 5° or more higher ; give air at every favourable opportunity. Start succession-houses, commencing with a low temperature.

The buds of early *Peaches* will now be swelling ; do not hurry them ; a night temperature of 50° will be sufficient for the present ; keep the borders well watered, and give air freely when the weather is favourable.—M. SAUL, *Stourton*.

AURICULAS FROM SEED.

ONE frequently hears of want of success in raising Auriculas from seed, the fault, as a matter of course, being usually laid to the seed. It is, perhaps, not generally known, that more than ordinary care is necessary to insure success ; and this being the case, a few practical hints may be useful to those who take an interest in raising seedlings. As already stated, Auricula seed is a very precarious crop to raise, and much depends on the time of sowing, and the treatment given. About the middle of January is the best time for sowing. The seed should be sown in well-drained pans, using rather a light soil, making the surface quite smooth, and distributing the seed very regularly ; then pass a little of the soil through a very fine sieve, but only just sufficient to cover the seed. The pans should be placed on a very gentle bottom-heat, and the soil should be kept moderately moist, taking care never to allow it to get either too wet or too dry. In about four or five weeks most of the young plants will have made their appearance. The pans should then be removed, and the young plants hardened off by degrees, very gradually, but still keeping them in rather a warm situation till the end of March. It will then be necessary to remove them into a cold frame. Whenever the weather is favourable, plenty of air should be given, and they must be kept shaded from the sun. As soon as the plants are large enough, which will be about the end of April, the largest of them should be taken and pricked out into other pans, at about two inches apart. During the summer months they should be placed in some shady situation, and kept well watered, so as to maintain them in a growing state. By the end of August the plants will have made great progress, and many of them, especially of the Alpine varieties, will again require to be removed ; these should now be potted singly into middle 60-sized pots, as most of the stronger ones will flower the following spring, a result which plainly shows the great advantage to be derived from this mode of raising the seed, which forces every live grain into vegetation in a few weeks, whereas by the method generally adopted, without the aid of bottom-heat, a great portion of the seed does not even vegetate till the second year, and the weaker seeds seldom vegetate at all.—J. BALL, *Slough*.

CŒLOGYNE CRISTATA.

EVEN those who are least observant cannot fail to notice the great increase, at the present day, in the demand for cut flowers. It therefore behoves those who have to provide them, to study what subjects they should grow, so as to keep pace with the demand. One of the first considerations is to select those things which afford a supply at a time of the year when flowers are scarce, that is, during the autumn and winter. Another essential point is

to secure flowers which are lasting when cut. There are few plants that fulfil these conditions better than the *Cælogyne cristata*. No establishment, large or small, where there is the convenience of an ordinary plant-stove, ought to be without it. When urging its claims, I have often been met with the objection that it is an Orchid, and that Orchids are difficult to grow. True, I reply, it is an Orchid, but to its other good properties may be added this, that it is as easy to grow as a geranium.

Being a native of the high, comparatively cool, humid regions of Nepal, we may at once see the necessity of growing it in an intermediate house, with a copious supply of water during its season of growth, and of never allowing it to become dry when at rest, otherwise its pseudobulbs will shrivel, and the whole plant will suffer. Its flowers, pure white, excepting the base of the labellum, which is yellow, are produced freely during the dull months of December and January, and will last for a week in a cut state in an ordinary sitting-room, if properly supplied with water. For bouquets it is a fitting rival for the Queen of Orchids (*Phalænopsis*), possessing the advantage of being a much cheaper plant, and increasing freely. It is one of the plants that should be grown by those who admire the most chaste and exquisite flowers, but who do not care to grow a general collection of Orchids.

Those about to commence its cultivation ought to procure plants early in the spring. If they require potting, it should be done about the beginning of March, using two-thirds chopped sphagnum and one-third fibrous peat, with a liberal admixture of pot-sherds, giving also plenty of drainage, for in bright weather the plants will require water every other day. Avoid drying currents, by never placing the plants near the openings where air is admitted, or within reach of the drying influence of the pipes. Use a slight shade in sunny weather. The plants succeed well in an intermediate house, or in a vinery where the grapes have the assistance of a little fire-heat. By the end of October or November they will have completed their summer's growth, and begun to push their bloom-spikes, which appear at the base of the pseudobulbs. At this stage keep the plants regularly supplied with water, but not so wet as during their more active season of growth. Moreover, do not apply water overhead, as if the bloom-spikes that are pushing up get wet, they are liable to damp off. A temperature of from 50° to 55° , with the atmosphere a little drier, will suit the plants whilst in blossom, after which they should be kept at something like the same temperature, but as I have hinted above, never allowed to become dry.—T. BAINES, *Southgate*.

RENDLE'S REVERSIBLE WALLS.

THIS, I take it, is an original invention. It is, however, of more import to learn whether it is likely to prove useful. The idea of covering choice espalier trees from spring and autumn frosts, thus saving the blossom-buds, and hastening the maturation of the fruit, is a most excellent one. In these reversible walls we have the means of doing it for about 5s. per square

foot of surface covered. Of course, in protecting espaliers, both sides must be enclosed. It is proposed here to form a back of canvas, or other textile fabric, and to cover the front with glass. At times, however, this arrangement would

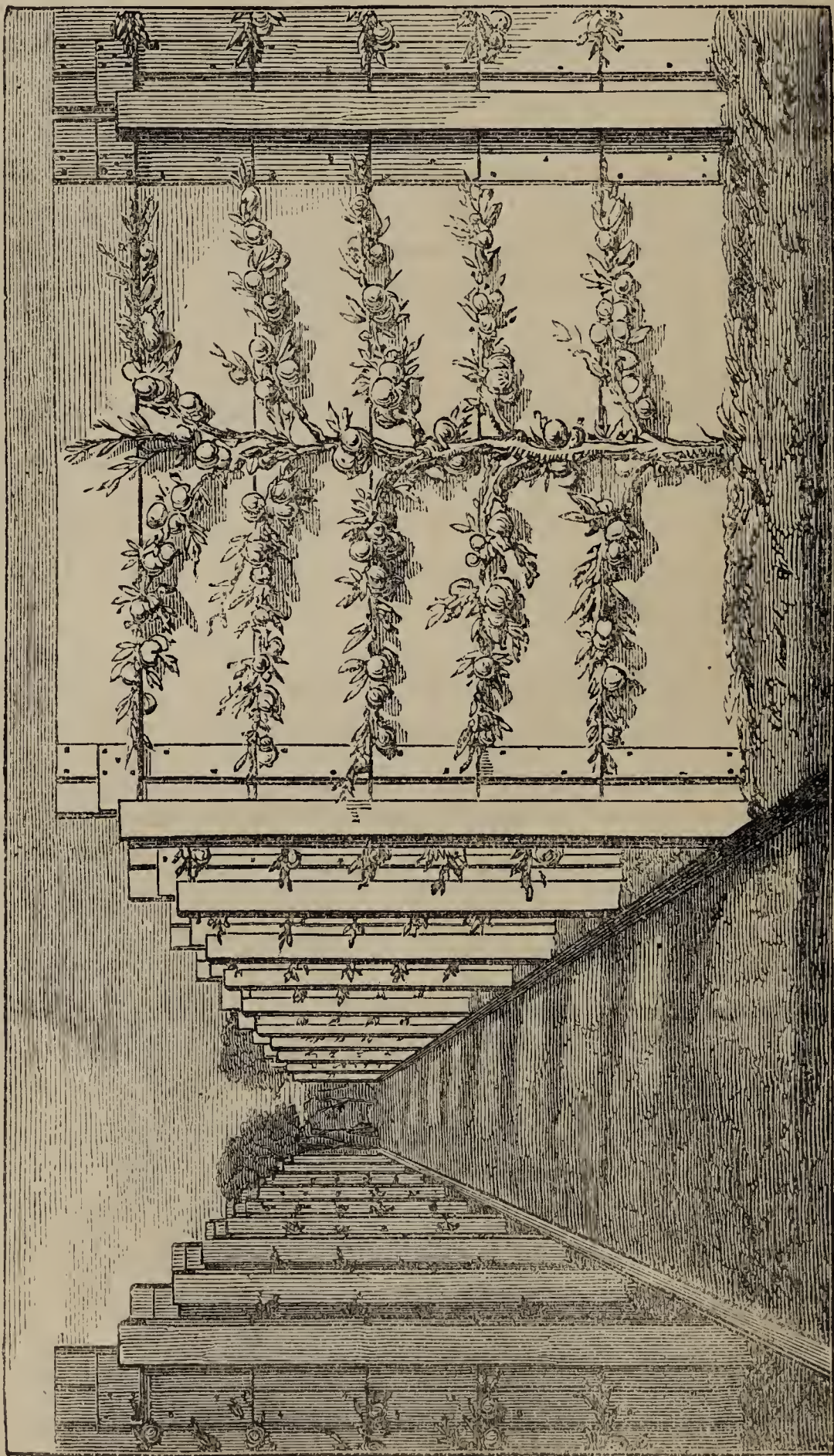


FIG. 1.—THE REVERSIBLE WALLS IN USE.

be reversed. By placing the opaque side to the south, the blossoms would be retarded, instead of forwarded; and perhaps, as a rule, this would be the safest mode of using the reversible glass walls in the spring. The great danger, at that

season, arises from the forwardness of the blossoms. Retard them by [any means for a week or a fortnight, and the crop is saved. A canvas screen tacked between them and the sun would keep them back; nor would this shade



FIG. 2.—THE REVERSIBLE WALLS REMOVED

weaken them much when the north side had a glass face over it. The trees would enjoy the light, without being pushed forward by the heat of the sun.

During a spell of dull weather, the relative position of the transparent and

opaque sides of the wall could readily be reversed. The latter is also water-proof, so that these walls would be impervious to cold rains, hail, and snow, as well as wind, and to a great extent frost-proof. Fig. 1 shows the wall in use. The canvas back is simply tied on to the espalier, and the glass fitted up, with a wooden frame and grooved iron bars to hold the glass. To forward late fruits in the autumn, the glass would be put in front. It would be easy thus to forward late fruit, and to give a high finish to any varieties that the natural heat of sunless autumn might have failed to ripen. Again, to keep late Plums or Peaches, the opaque side might be put in front; and such Plums as the *Impératrice* be kept hanging on the trees for almost any length of time, the glass wall protecting the fruit alike from adverse climatic conditions and the attacks of vermin. The espaliers, with the framework for receiving glass, &c., the walls being removed, are shown in Fig. 2.

The greatest merit of this invention is its thorough portability. In use for a month or six weeks in the spring, and perhaps for another month in the autumn, the trees and the crops would be freely exposed all the summer, while the glass walls could be used as wide ground protectors, &c., or be stored up safely for use another season. Thus treated they would last for years, and could hardly fail to ensure a crop in many situations where it is now next to impossible to do so. We therefore welcome these reversible walls, glass copings, portable cases, and all other temporary shelters that will help us to conquer the seasons, or aid in filling the national fruit-basket fuller, and with fruit of better quality.—F.

NEW HYBRID NOSEGAY PELARGONIUMS.

PERHAPS one of the most valuable breaks in the way of Hybrid Nosegay and Zonal Pelargoniums is that obtained by Mr. James George, gardener to Miss Nicholson, of Putney Heath, Surrey, some three years ago. Some of the varieties so obtained have been shown during the past season, and received First-Class Certificates—sure proofs of their undoubted worth. I well remember Mr. George exhibiting these seedlings at one of the meetings of the Royal Botanic Society in 1870, and though they received no acknowledgment at the hands of the judges on that occasion, there was about them so much of promise that I was not surprised to find a year later that they were shown in remarkably fine condition. Most of the seedlings were of the Hybrid Nosegay type, having large stout flowers of great size and substance, and immense symmetrical circular trusses, generally freely produced.

There appears to have been quite a competition among the London Florists as to who should send out these new Pelargoniums. Four of them have passed for distribution into the hands of Mr. G. Smith, of Islington, the sender-out of *Le Grand*, *Grand Duke*, *Eclat*, *Lizzie*, and other splendid varieties; and I think he may be said to have had the pick of them. His lot consists of:—*Polly King*, rosy peach, dashed with white towards the edges, the eye white, the petals large, stout, and finely formed, the trusses grand, the plant very free-blooming, and of

excellent habit ; this received First-Class Certificates both from the Royal Horticultural and Royal Botanic Societies. *J. Caven Fox*, bright rosy scarlet, a great acquisition, having large and beautifully formed pips, and extra large trusses, as well as an excellent habit ; this also received Certificates like the foregoing. *Flame*, a variety remarkable for its brilliant colour, which is of a glowing vermilion-scarlet, the truss large and compact, and with a capital habit ; this is a fine decorative variety, and will make a fine exhibition plant ; it received a First-Class Certificate from the Royal Horticultural Society. The fourth it is evidently Mr. Smith's intention not to distribute this season ; it is a hybrid Ivy-leaved variety named *Conqueror*, the result of a cross between an ordinary Ivy-leaved Pelargonium, and one of the finest of the Nosegay type, and is considered to be one of the most distinct of the hybrid Ivy-leaved race yet raised.

Messrs. Carter and Co., of Holborn, and Crystal Palace Nursery, Perry Hill, will distribute seven of these new Pelargoniums, viz., two of the ordinary Zonal type :—*Dr. Livingstone*, brilliant crimson-scarlet, with distinct white eye, very bright and showy ; and *Troubadour*, soft rosy salmon, a very pleasing shade of colour, and a large bold flower. Of the hybrid Nosegay type they will distribute :—*King of the Forest*, deep crimson flowers, large and bold, with noble truss, an excellent exhibition variety ; *Magnificum*, salmon-scarlet, tinted with carmine, white eye, very large and full truss ; *Overall*, purplish magenta, a very pleasing shade of colour, and very large, well-shaped truss ; and *Progress*, purplish carmine, the flowers of great substance, lasting for a considerable time, and forming large full truss. The seventh is a hybrid Ivy-leaved, named *Favonia*, colour purplish carmine, darker in hue than Lord Palmerston, and likely to prove a valuable addition to this favourite class.

Mr. Cannell, of Woolwich, has secured a batch of seven varieties. He will distribute :—*Albert Memorial*, rich fiery crimson-scarlet, a most attractive and fine variety ; *Circulator*, rosy-scarlet, very fine pip, and immense truss ; *Fred. George*, glowing deep red, approaching to crimson, and because of its fertility of bloom and excellent habit, one of the most valuable decorative varieties ever sent out ; *Master Harry*, in the way of Jean Sisley, but with much larger pip, and a noble truss, extra fine quality ; *Mr. Bartholomew*, beautiful cerise-scarlet, with fine pips and immense truss, the habit dwarf and stocky ; *Mrs. Edward Ottewell*, cerise orange-scarlet, with a conspicuous white eye, the truss large and very attractive ; and *Putney Gem*, clear orange-rose, very pretty, and free-blooming.

The bedding Pelargonium is, therefore, far from being “used up” while such a batch of fine varieties is being produced, and as many other raisers have been successful also in obtaining new varieties of acknowledged merit, there must be a large demand still for them. If foliaged plants are beginning to drive the masses of scarlet Pelargoniums from the flower-garden, or at least narrowing the area of their use in that way, yet they are in great demand for the summer decoration of the greenhouse and conservatory, where they are unsurpassed. There, fine and improved varieties are as necessary as in the flower-garden, and

raisers like Mr. George, Dr. Denny, Mr. J. R. Pearson, Mr. W. Paul, and others, keep up an unfailing supply.—Quo.



DAVALLIA MOOREANA.

BEAUTIFUL as are many of the *Davallias*, which help to furnish our in-door ferneries, there can be no question that our present subject is one of the finest of the family, combining in no ordinary degree the characteristics of gracefulness and nobility of aspect. It was introduced from Borneo, by the Messrs. Veitch and Sons, several years ago, but has only recently been made public. The plant has a short, stoutish, decumbent rhizome, from which are produced the large pale-green fronds, which have a peculiar bullate surface, occasioned by the protuberance on the upper side of the somewhat sunken sori. The fronds are from 2 ft. to 3 ft. long, and from 1½ ft. to 2 ft. wide, almost

triangular in outline, but lengthened out at the point, supported by stoutish, smooth, pale-coloured stipites, and most elegantly cut into a multitude of small blunt segments. The sori are large and solitary on the ultimate sub-divisions of the frond, and have the oblong cup-shaped form, characteristic of the true



DAVALLIA MOOREANA.

Davallias. The plant, which occurs in the New Hebrides, has also been called *Davallia pallida*. One of our figures represents the contour of the plant, while the other shows more exactly the form and sub-division of the fronds, and the position and general appearance of the sori. It of course requires stove heat, and well deserves the most careful culture, delighting in liberal treatment, when the roots have once become well established.—T. M.

THE GOLDEN CHAMPION GRAPE.

FEEL somewhat diffident in speaking of this grape, because I think we have not yet tried it long enough to speak positively. I have both a bad and a good word to say of it. In the first place, it is what I consider a very highly-bred grape, with some good points well developed, but in consequence, as I think, of its high breeding, lacking the essentials of good health, namely, a uniform growth and well-ripened wood all through. The berries blotch before they are ripe, and will not keep long after ripening. I had some handsome bunches to look at, ripe, in June of this year, and I tried to keep them for a few weeks, but failed entirely, none of them being fit for table in consequence of being so much marked with blotches. Now for the good points. It bears a most handsome bunch, with very large berries: indeed, it is perhaps the handsomest of all grapes; it is a good setter, and a strong but unequal grower. It would make a good market grape, on account of its large berries, and because, where the crop is to be sold, it can be cut at once, when ready, before getting spoiled—J. FREEMAN, *Knowsley*.

KITCHEN GARDENING FOR JANUARY.

IN this first month of the year work entirely depends upon weather. As the long continuance of autumn frosts has retarded all garden operations, advantage should be taken of favourable weather to push forward delayed work of every kind, as draining, trenching, ridging, digging, &c. As soon as the ground is sufficiently dry, *Peas* and *Beans* of the early kinds may be sown on a well-sheltered border. Some should also be sown in pots or boxes, and placed in a vinery or peach-house just started, to be transplanted out-doors on a sheltered border towards the end of February; these will come in for use as soon as those sown out-doors in November. Sow *Radishes* and *Early Horn Carrots* in frames on gentle hot-beds, and towards the end of the month, if the weather be open and the soil dry, some may also be sown on a warm border. Give air freely to *Cauliflowers* and *Lettuces* under glasses and in frames; stir the surface soil; pick off the dead leaves, and dust with quick-lime. I cannot too strongly recommend the TRUE *Walcheren* to all who want good Cauliflowers. I have been cutting them from the beginning of June last, up to the present time, and shall be able to continue cutting late into next month from plants in cold pits. My earliest cutting in June was from plants grown in pots during the winter, and planted out at the beginning of March at the foot of a south wall; the supply, from that to the present time, has been from sowings made in March, April, and May. Sow *Mustard* and *Cress* in boxes weekly, and place them in a little heat. Put some *Ash-leaved Kidney Potatos* into heat to sprout. Cover up fresh patches of *Seakale* and *Rhubarb* for succession, or put some roots into the mushroom-house. Make a gentle hot-bed for a fresh batch of *Asparagus* roots. *Parsley* and *Celery* should be well protected from frost.

Repair and plant Box-edgings, and clean and roll walks, when the weather permits. In frosty weather wheel manure on to the places where it will be required. Rods for peas and stakes for scarlet-runner beans, &c., should now be procured, and made ready for use; also labels for naming vegetables. When these and other such-like little jobs, which will readily occur to a man of perceptive mind, are done now, the labour required in preparing them, instead of being spent when these things are wanted, can then be turned to better account.—M. SAUL, *Stourton*.

GARDEN GOSSIP.

THE following *Arrangements of Societies* for the coming season are announced:—The *Royal Horticultural Society* will hold its meetings on January 17, February 14, March 6 and 20, April 3 and 17, May 1 and 15—16, June 5—7 and 19, July 3 and 17, August 7 and 21, September 4 and 18, October 2, November 6, December 4,—the three-days' exhibition in June being the grand show of the season.—The *Royal Botanic Society* will hold spring shows on March 13, April 10, and May 8, and summer shows on May 22—23, June 19—20, and July 10—11.—The *Provincial Show of the Royal Horticultural Society*, at Birmingham, will open on June 25, and close on June 29.—The *Botanical and Horticultural Society of Manchester* announces six Monthly Floral and Horticultural Meetings similar to those held fortnightly at South Kensington, on February 20, March 19, April 9, September 10, October 8, and November 19. The annual National Horticultural Show, under the auspices of this Society, will be held in May, from the 18th to the 23rd, the Rose and Fruit Show on July 5 and 6.—A great Exhibition of flowers, fruit, vegetables, and horticultural subjects generally, open from June 21 to June 30, is to be held at Berlin in June next, in celebration of the fiftieth anniversary of the establishment of the *Society for the Promotion of Horticulture in Prussia*.—The *Royal Agricultural and Botanical Society of Ghent* proposes to hold its usual quinquennial International Horticultural Exhibition at the end of March, 1873.

—THE *Gardeners' Year-Book, Almanack, and Directory* for 1872, issued by Dr. Hogg, is more illustrated than usual. Its descriptions of New Fruits and New Plants are some of its more important and characteristic features, and with the usual matters of reference, make it a necessity for the garden library.

—THE South-American *Goniophlebium appendiculatum* has been lately recommended for its property of keeping well when cut; it is stated that the fronds will stand three weeks in water in a perfect state. This warm greenhouse species is one of the most valuable of the winter decorative Ferns; it is most impatient of heat, and should never be allowed to get dry.

—THE *Garden*, a new weekly journal of horticulture, which has recently appeared, has been projected and is conducted by Mr. Robinson, and is well got up, its distinctive feature being a profusion of wood-cut illustrations. Its appearance is an indication of the healthy progress of horticulture in this country.

—FEW subjects are gayer in the spring months, or more useful for forcing purposes, than the *Double-Flowered Peaches*—white, crimson, or striped. The French horticulturists have a new striped-flowered variety, named *striata*, which is said to be a vigorous, abundant-blooming plant, with freely expanded flowers, the greater number of which are flaked with bright red, others being partially, and some wholly, of the brilliant red colour.

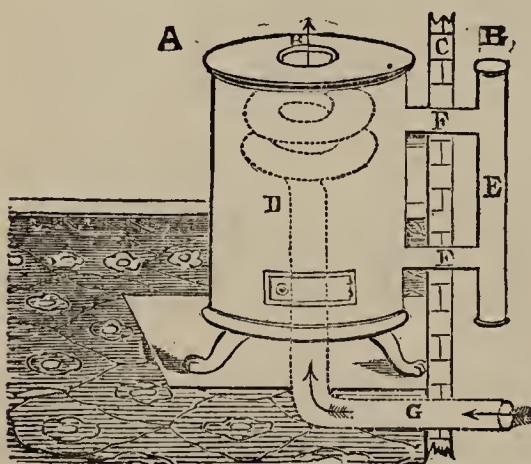
—THE *Tamarix plumosa* is one of the prettiest of shrubs, the multiplicity

and the fineness of its branches giving it a most graceful appearance, and gaining for it in Paris the name of Marabout. This plant, more generally called *Tamarix japonica*, probably originated from a bud of *T. indica*, which assumed this peculiar manner of growth. It is as hardy as *T. indica*, and its culture and multiplication are identical.

— AN instance of *Variegation induced by Grafting* occurs in the nursery of Mr. W. Paul, at Waltham Cross. The tree is the Chestnut, *Castanea vesca*. The variegated variety of the Chestnut had been grafted, standard high, on an ordinary green-leaved Chestnut stock; the graft took, but from some cause or other afterwards died off, and subsequently a young shoot, with well-marked variegation on its leaves, broke out from near the base of the stem. The variegation is of a creamy white colour, and marginal.

— As a *Covering for Lawns*, in the case of hot sandy slopes where lawn grasses cannot maintain their ground, the adoption of common Wild Thyme, common Yarrow, and common Chamomile as substitutes for the grasses has been recommended. Some banks which have been so treated have yielded, it is said, a peculiarly dense and beautiful turf.

— A NEW patent gas stove, called the *Calorigen*, seems likely to be a useful apparatus for heating small conservatories, as the temperature can be regulated to a nicety without risk of over-heating. The annexed illustration shows the



GEORGE'S PATENT GAS CALORIGEN.

general outline of the stove. In rooms or buildings where a chimney is not available, two holes are made in the wall to allow the pipes *r* and *r* to pass through. The cylinder *E* is attached to the ends of the pipes *r* and *r*, with the open end upwards. When the gas is lighted the products of combustion leave the stove by the upper pipe *r*, being discharged into the cylinder *E*; at the same time a current of air passes down the cylinder *E* through the lower pipe *r*, to support combustion. One end of the pipe *G* is inserted in the opening at the bottom of the stove, while the other end is carried either through the floor or wall, to communicate with the external atmosphere. When the gas is burning in the stove it will heat the coil contained therein, thereby causing the air to rush in through the pipe *G*, and out of the opening *H*, and by these means affording a constant supply of pure warm air. The door of the stove is kept closed, and when not in use a cap is placed on the outlet *H*. Water being one of the results of combustion, the pipes *r* and *r* decline slightly from the stove, and so cause it to flow into the cylinder, where a small hole is provided for its escape. The manufacturers are Messrs. J. F. Farwig and Co., 36 Queen Street, Cheapside, E.C.

Obituary.

— DR. BERTHOLD SEEMANN, F.L.S., the well-known botanist and traveller, died at the Javali Mine, Nicaragua, on October 10, from fever caught at Colon. He was born at Hanover in 1825, and became a pupil in Kew Gardens. In 1846 he was appointed naturalist to H.M.S. Herald, then on a surveying expedition in the Pacific, and in 1859 was sent as a Government Commissioner to examine and report on the Fiji Islands. The result of this journey was the publication of the *Flora Vitiensis*, as that of his former voyage was the publication of the *Botany of H.M.S. Herald*. Dr. Seemann established the *Bomplandin*, a botanical journal, and the *Journal of Botany, British and Foreign*; and was the author of the only *Popular History of Palms* we have. Many new plants were introduced and many papers contributed to horticultural literature by him.

— HENRY BELLENDEN KER, Esq., died at Cannes, on November 2, at an advanced age. He was for some years editor of the *Botanical Register*, and some quarter of a century ago was an enthusiastic plant-grower, and a frequent contributor to the horticultural periodical press.



Pyrus spectabilis roseo-plena.

PYRUS SPECTABILIS ROSEO-PLENA.

WITH AN ILLUSTRATION.

FAR too little use is made in ornamental planting of the lovely early-flowering Chinese and Japanese Pyruses, one of which, *P. Malus floribunda*, we figured a short time ago. Our present subject is similar in habit, but slightly stouter in growth, the vigorous one-year-old shoots producing as that does, short leafy spurs, terminating in crowded clusters of from four to six large showy flowers, while the older shoots throw out short laterals, which are equally clothed with flowers. The leaves are oblong acute, rather larger than in *Malus floribunda*. The flowers are of a lovely rose-pink, paler in the expanded state, and as the branches are naturally laden with a profusion of blossoms, the tree presents a charming play of colour during the flowering period. The colour resembles that of the monthly rose, but is brighter, and the half-opened flowers have just the appearance of diminutive pink roses. In this state they are about an inch across, while when fully expanded they measure as much again, the flowers being semi-double, with about three rows of large bluntly-ovate clawed petals, and having in the centre a crowded tuft of stamens and abortive pistils. The ovary is obconical, pubescent, with short triangular calyx-lobes, and the fruit, here and there produced, is roundish, slightly elongated.

We have here one of the gayest of early-flowering, hardy deciduous trees, one of a class of subjects which deserves to be much better known and more frequently planted. Later than the almond, but earlier than the hawthorn and laburnum, these charming low trees come in with double-blossomed cherries, and lilacs of all hues, to light up the prominent parts of the shrubbery or the pleasure-ground with their gay and abundant flowers, which, as they hang on the branches, may be compared to garlands of tiny pink roses—so closely, indeed, simulating them in appearance, that the scent only seems wanted to complete the illusion.

We are indebted for the specimens here figured to Mr. A. Waterer, of Knap Hill, Woking, who obtained his plants from the neighbourhood of Abergavenny. Though not new, it is comparatively rare, and appears to be very little known. It is, however, one of those trees of which it may emphatically be said, that it deserves a place in every garden in which it does not already exist.—T. M.

ROSES AND ROSE-CULTURE.

CHAPTER X.—ON TEA-SCENTED ROSES.

IT is just probable that some of our Amateur Rose-growers who do not visit the London shows, or the large nurseries or gardens, may never have seen a collection of Tea-scented Roses when in full bloom, under the management of an experienced and successful cultivator. I do not speak of the wretched starvelings sometimes met with, but of the huge pyramids in pots which have been staged at flower shows, and of the bold examples often found in the borders of English conservatories, climbing up the pillars and under the

rafters with a careless grace, rich in foliage, and abounding with blossoms, whose size and delicacy of colouring captivate the eye, and whose odour appeals irresistibly to the organ of another sense. Those who have thus seen them, will probably agree with me in thinking that the highest order of beauty in the Rose-world is here; those who have not, should begin at once and cultivate them in this manner for themselves, for nothing, let me say, is easier. I anticipate some may reply, "Oh, we have seen Tea-scented roses grow and flower very well out-of-doors; why, then, should we be at all this expense and trouble?" It is readily granted that Tea-scented roses may sometimes be obtained good out-of-doors, and what has been once done may be done again. But I want to place the grower on a sounder basis; to render that which is a work of chance a work of certainty, by recommending a course of culture which shall be attended with surer and higher results.

First, then, let me say that Tea-scented Roses should be grown under glass. Give them a house entirely to themselves, that no conflicting interests may induce you to sacrifice theirs. A span-roofed house sloping east and west is the best; the top-lights should be moveable, the doors opening level with the ground; thus we secure thorough ventilation, an essential point in the successful cultivation of Tea-scented Roses. No heating apparatus is necessary, although it must be considered advantageous. As to the internal arrangement of the house, a border may run round the inside next the glass, say $2\frac{1}{2}$ ft. in width, then a path of the same dimensions, with a 5-ft. bed in the centre. In the side border may be placed two rows of plants, the back row composed of the most vigorous-growing kinds, dwarfs or standards trained up the sides and under the rafters of the house, similar to the plan pursued with grape-vines. In the front row may be placed the dwarfer-growing kinds, trained as bushes. The centre bed will contain three rows; the most robust sorts should here occupy the centre, leading them up as pyramids, and when they reach the top of the house, allowing a branch or two to run along the ridge.

Tea-scented Roses grow most vigorously in a peaty soil, but they do not produce the best flowers in such soil. When forming the beds or borders, remove the soil to the depth of $3\frac{1}{2}$ ft., and throw into the bottom 6 in. of brick-bats, stones, or any rubble, over which fern, furze, or fir branches may be placed, to keep the soil from mixing with the drainage. A good soil for Tea-scented Roses is two parts of turfy loam to one part of cow-dung; if the loam be of a close texture add leaf-mould and silver-sand. Knock the turf and cow-dung well to pieces, and mix all thoroughly, without sifting, in autumn, turning it over occasionally throughout the winter. In March convey this soil into the house, and plant the roses. Procure as strong plants as possible. Those known in the nurseries as "extra-sized" are worth more than the extra money they cost.

The plants being in the ground, we have to speak of their treatment during the first year. Keep the soil moderately moist, and give air abundantly night and day, except in frosty weather. Do not prune, but pick off the flower-buds

just as they show colour, that the energies of the plants may not be diverted from making wood. On the approach of winter a covering—Russian mats will be sufficient—should be provided to draw over the glass in case of severe frost, for be it remembered we are assuming that no heating apparatus is in use. Slight frosts in autumn or in winter rarely injure Tea-scented Roses; the plants growing out of doors are injured or destroyed in winter and spring by severe frost and water at the root, or by the sudden alternations of frost and sunshine after damp or rain. If, therefore, the plants in a house not heated, become at any time covered with rime from the severity of the night's frost, it is well to leave the mats on the house during the day, to exclude the sun. When the roses have been planted a year, they may be pruned sparingly—the outer row of both centre and side beds should be cut into round bushes, while one leading shoot from each plant in the back row of the side beds should be left full length, fastening it to a wire leading to the top of the house. A stick should be put to each plant in the middle row of the centre bed, to which the leading shoot should be tied, and left unpruned; the other shoots may be shortened to one or two eyes each. This year the flowers may be allowed to mature themselves, not, however, in too great numbers, as the plants cannot yet be considered thoroughly established. But we now begin to reap the fruit of our labour. We now prune in winter instead of in spring, for we want the first flowering to take place in April and May, before the roses are in flower out-of-doors.

The routine of cultivation is henceforth the same as that followed with Roses in general. A top-dressing of cow-dung should be given once a year in winter, and the surface soil should be loosened frequently afterwards with fork or hoe. Mildew, if it appears, should be kept down by the use of the sulphurator, and green-fly must be destroyed by fumigating with tobacco. It must be remembered, however, that the seasons are earlier within doors than without, and we must suit the various operations to the seasons.

In dealing with Roses under glass, great care should be taken at all times to keep the air pure. If damp, the remedy is a free admission and circulation of air from without; if dry, the use of the syringe, morning or evening, or both if required. Shortly after the winter pruning, the house may be closed early, and opened late in the day, to encourage the buds to break; and when they do so, caution is necessary in the admission of air, for in the early growing season the young leaves are tender, and easily injured by the cold cutting winds of spring, so that, above all things, is it then necessary to avoid currents of air or draughts. As the leaves and young shoots harden, air may be admitted more freely, up to the time of flowering, when night air improves the colours and lengthens the duration of the flowers.

When the first flowering is over, the plants naturally fall into a state of rest, and this state should be artificially preserved for as long a period as possible. Remove the top-lights altogether, except in rainy weather, and leave the side-lights constantly open. Give no water till such time as the buds are seen to be

swelling and ready to break. Then remove the remains of the old flowers and clear away the falling leaves; water sparingly at first, and afterwards more plentifully, keeping the top-lights altogether removed, and the side-lights constantly open. When the flower-buds are about to expand, the top-lights may be put on, drawing them up in wet weather only, to shield the flowers from the rain. It will probably be August or September before the flowers of the second crop expand, and by keeping the house as cool and airy as possible the blooming period at this season will be greatly prolonged. If, however, flowers are wanted early and late in the season (March and December), artificial heating should be employed—for late roses only so much as will keep the air dry; for early roses much or little, according to the season at which the flowers are wanted.


But the flowers are again over, and the second period of rest has arrived. Dryness at the root must again be preserved, and the cold weather now aids in preserving the plants in a dormant state.

Such is the plan I advocate for the culture of Tea-scented Roses, and fully assured am I—not from theory only, but from experience—that if faithfully followed out, it will be attended with a satisfactory measure of success, securing to the practitioner an abundance of the most beautiful roses at the most desirable of all seasons, winter and early spring.

In my last chapter (1871, p. 244) I gave a list of some of the best varieties of Tea-scented Roses, and to that list may now be added the following, including several novelties:—Adrienne Christophe, Alba rosea, Annette Séant, Belle de Bordeaux, Belle Maçonnaise, Belle Lyonnaise, Bougère, Climbing Devoniensis, Comtesse de Brossard, Coquette de Lyon, Homer, Hortensia, Jean Pernet, La Boule d'Or, Madame Azèlie Imbert, Madame Ducher, Madame Falcot, Madame Gaillard, Madame Hippolyte Jamain, Madame Levet, Madame Margottin, Madame Trifle, Mariè Ducher, Monsieur Furtado, President, Rubens, Sombreuil, Souvenir d'Elise Vardon, Souvenir d'un Ami, and Victor Pulliat.—WILLIAM PAUL, *Paul's Nurseries, Waltham Cross, N.*

PICTURES OF PALM TREES.

PHŒNIX SYLVESTRIS.

 HIS Palm is common in India, where it forms a stoutish tree. Our figure, which we owe to Messrs. Haage and Schmidt, represents it in its juvenile aspect, which is the most convenient for garden purposes; the figure, which is one-sixth the natural size, having been prepared from a plant only four years old. It is the *Elate sylvestris* of Linnæus, and grows to the height of about fourteen feet, the trunk being covered with an ash-coloured bark, closely united with the hard whitish wood. The leaves are pinnate, and consist of ensiform pinnæ, which are disposed in sub-opposite fascicles. The fruit, which is like a wild plum, contains, besides a sweet farinaceous pulp, an oblong nut, which is chewed by the poorer sort of people with the leaf of the betel and quick-lime, in the same manner as the *Areca* nut. The copious sap which flows from the

stem after incision, becomes, like the juice of other palms when fermented, a potent spirit ; sugar is also prepared from it by boiling.

It is easily cultivated, requiring only a stove temperature, strong loamy soil, and a copious supply of water when growing.—M.



PHŒNIX SYLVESTRIS.

THE PINE-APPLE NECTARINE.

I WAS pleased to see your notice and coloured illustration of the *Pine-apple Nectarine*. This variety I place at the top of the list, both for appearance and quality. For pot-culture in the orchard house it is unsurpassed. I have several trees of it, and all of them have borne fruit of exceptionally fine quality. It is a very hardy, free-bearing sort, its blossoms not being so easily injured by wet and cold as some others. I bought a “maiden” tree of it in the autumn of 1866. It was potted and grown the following season in the orchard house, and in 1868 it bore a crop of fine fruit. I exhibited a dish of it, and was awarded the first prize, notwithstanding a pretty strong competition. At the time the fruit was gathered, the tree was exactly three years old from the

time the bud was inserted. The tree cost 1s. 6d., and it paid for itself six times over in the second year, thanks to Mr. Rivers for teaching us how to manage them.

The *Victoria* Nectarine is the best late variety, and far superior to *Prince of Wales*, or any other late sort I know of. It requires careful watering when the fruit is taking the second swelling, as, like its parent the Stanwick, it has a tendency to crack. *Prince of Wales* also used to crack badly with me, but I cured this by withholding the usual surface-dressings in summer.—J. DOUGLAS, *Loxford Hall*.

THE CULTURE OF NEAPOLITAN VIOLETS.

AT the present time, I have a long row of Neapolitan Violets in pots, in flower, and I need not say how these fragrant blossoms are prized at this period of the year. My mode of cultivating them has nothing new in it; but having the advantage of a glass-covered wall, and placing the pots under this shelter in a position where they get the most air and light, I find that they never fail to flower well in the winter months. The plants are grown on a north border, in a rich, light soil, and great care is taken to prevent the red-spider from attacking the foliage—for this insect is a great pest to them in dry summers. When strong runners are selected in May for planting out, they are dipped in a can of a solution of soft-soap and sulphur. Should red-spider appear in the course of the summer, a good dusting of soot is likewise sprinkled over the foliage, and they are well watered when dry weather occurs. The soot acts as an excellent fertilizer to the plants, besides keeping the red-spider and aphids in check. Early in September the plants are potted in a rich friable soil, using plenty of drainage, and a little soot and bone-dust on the top of the crocks, the soot preventing worms from entering below. After potting, the plants are put into the open air in a shady situation, and watering is well attended to in dry weather. In the beginning of November the pots are placed in the front of a glass-covered wall, and the plants commence flowering in December. A three-light frame is likewise planted, in September, with the strongest of the spare plants, and they keep up a succession of flowers in February and March. A few dozens of pots of the Czar, the King, and Queen of Violets are likewise grown for variety, but I think the Neapolitan is the most fragrant and valuable to have in flower in the winter months.—WILLIAM TILLERY, *Welbeck*.

HOW TO UTILIZE GARDEN REFUSE.


AT this season of the year, when the remains of summer growth is being thoroughly cleared away throughout the garden and pleasure-ground, I have thought that a few hints as to how to appropriate and make the best use of it, might prove timely in the case of such of your readers as may not have given the subject full consideration. Let one but speak about economy, and the way to save a shilling, and everybody will listen. In this case, the means to that end, is simply to put the refuse of the garden in the right

place. The good motto of *Waste not, want not*, might be very appropriately written up over the principal entrance to every garden, as a general reminder in reference to the subject of this article.

A description of the plan we have adopted here, for a series of years, in utilizing all refuse vegetable matter, will serve to show how well the system works. I will begin with the piggeries. In front of these is an enclosure to which the pigs have free access. Here, throughout the summer and autumn months, is put all the vegetable refuse, such as the early-potato haulm, trimmings of kitchen stuff, cabbage and cauliflower stems and leaves, bean and pea haulm, &c. These are spread over the enclosed space, with occasional layers of fresh horse and cow litter, and remain during the season. By the time the yard feeding is over, the mass is well trodden down, and when thrown up to ferment, forms an excellent mixture of strong valuable manure.

About the beginning of November we commence with the vegetable, or sweet heap, as the men call it. This is made in a corner of the store-heap ground, and consists of the vegetable and flower-bed clearings, which are spread out in layers as brought in, great care being, however, exercised to keep clear of seeding weeds. When the garden is entirely cleared, a thin layer of tree leaves is put over the refuse, and the whole is then covered with a thin coating of soil, and left to decay until the following November, by which time it is thoroughly decomposed, and fit for use. I have for many years used nothing but this as a manure for flower-beds, for which I find it is admirably suited, while we are thus enabled to effect a saving of all stronger manures for vegetable culture.—J. WEBSTER, *Gordon Castle*.

KITCHEN GARDENING FOR FEBRUARY.

 PROPER rotation of crops is of the greatest importance, and should, as far as practicable, be carried out. In gardens where there is a large extent of ground there is no difficulty in doing this, but in small gardens, from which a large supply of vegetables has to be obtained, it is not so easy a matter; still, wherever circumstances will admit, it should be practised. In general, all crops should be planted or sown in rows from south to north, in order that the sun may shine on every part of the soil between the rows, and equally on every side of the plants in the rows; by this method also, the plants can be more easily thinned, and the soil hoed and stirred between them.

Seeds should never be sown when the soil is wet, as, if they are old or not well ripened, they are liable to rot. When the soil is in a good condition, make a sowing of *Early Horn Carrots*, and *Early Dutch Turnips*, on a warm border; also of *Lettuces*, *Radishes*, and *Spinach*. Sow a good breadth of *Parsley*. Towards the end of the month sow *Cabbages* for summer and autumn use; also some *Brussels Sprouts*, *Broccoli*, and *Savoys*, for early planting; and if the soil be in a nice condition, the main crop of *Onions* may be got in. Make a small sowing of *Leeks* in a bed, to be transplanted, when fit, into trenches eighteen or twenty

inches apart, and ten inches in the rows. Make a sowing of *Peas* and *Broad Beans* at the beginning, and again towards the end of the month; earth up the *Peas* already sown when sufficiently advanced; they may also be rodded at once, and if a few branches of evergreens are stuck on each side of the rows, the shelter from frost, and cold cutting winds will be beneficial. Plant out *Cabbages* from store beds, and make good all gaps in the autumn plantations. Towards the end of the month, if the weather be mild, plant *Cauliflowers* and *Lettuces* out of frames into warm sheltered situations. *Ash-leaved Kidney Potatos* may be planted on warm borders. Plant *Garlic* and *Shallots* in rows ten inches apart, and six inches in the rows. Make a fresh hot-bed for a batch of *Asparagus* roots; very gentle heat is all that they require at this season. Cover up fresh batches of *Seakale* and *Rhubarb* for succession.—M. SAUL, *Stourton*.

MACLEAN'S BEST OF ALL PEA.

THE seed lists are now beginning to pour in, and we gardeners are thinking about the kitchen wants for the incoming season. I would therefore bring under the notice of the readers of the *FLORIST AND POMOLOGIST* the above splendid production. Notwithstanding the numbers of new peas that have of late years appeared in seedsmen's catalogues, there is not one more deserving of extensive cultivation, and to those who must have first-rate wrinkled marrows in their season, I believe *Maclean's Best of All* will be found a great acquisition, and will, when better known, constitute one of our standard second-early or main-crop varieties. In growth it is robust and vigorous, and like all Dr. Maclean's peas, short-jointed—a valuable point, in my estimation. The pods are very large, dark green, completely covering the haulm, and filled with from eight to nine fine peas, of a most delicious flavour. In height, it grew with me last year, about three and a half feet.—J. MCINDOE, *Bishopthorpe, York*.

PRIMULA JAPONICA.

THINKING it may interest your readers to learn something of the habit and growth of this magnificent *Primula*, we beg to forward a few extracts from letters received from Mr. Kramer, of Yokohama, Japan, who has at various times forwarded to us seeds and plants of this species. He thus writes respecting it:—

“If the drawing in the *Gardeners' Chronicle* is a true one, *Primula japonica* must be very much finer at home than it ever is seen here. A cold climate and good cultivation have, no doubt, great influence, for its native country is said to be the island of Yeza (November, 1871). It is generally found growing on the banks of streams and water-courses in yellow loam. I have seen it growing from 2½ ft. to 3 ft. high, with six or seven tiers of flowers—a magnificent sight. In sowing the seed it is very important to know that as this *Primula* is not a native of a warm country it requires no artificial heat for germinating, and that frequently the seed does not germinate until the next spring; in fact, the latter is the rule. I would therefore advise that the seed should be sown immediately, and left for at least six months undisturbed (June, 1870). I have now some boxes which have stood for two years, and this year there are more plants coming up than even in the first year (May, 1871).”

From this it appears that the seed takes a long time to germinate; that a cool,

moist, yellow loam is best suited to the plant; and that it is likely to improve much under cultivation. It will also prove especially valuable for hybridization, on account of its tendency to vary. We trust these few hints may prove acceptable to those who may contemplate rearing this beautiful plant.—TEUTSCHEL AND Co., Colchester.

GERARDIA, OR THE GOLDEN FOXGLOVE.

WE notice with pleasure the re-introduction of this exceedingly beautiful hardy plant, of which travellers speak in the highest terms of praise. M. Van Volkem, indeed, when writing of the *Gerardia quercifolia* (of which we introduce a figure, borrowed from the *Gardening Guide* of



GERARDIA QUERCIFOLIA.

Messrs. Hooper and Co., of Covent Garden, who have seeds of it and another species for disposal), describes it as a magnificent plant, with long spikes of golden-yellow flowers; and Mr. Robinson speaks of being sanguine as to its merits for garden purposes, describing the flowers as very thick and leathery, and their colour as being of a peculiarly rich and pleasing hue. The *Gerardias* are natives of North America, and occur in damp woods, which fact may perhaps form the clue to their successful cultivation. As will be seen from the figure, they have much the aspect of *Pentstemons*.

The *G. quercifolia* is a perennial (possibly biennial) species, and has smooth, glaucous, branching stems from 3 ft. to 6 ft. high, terminating in a paniced inflorescence. The leaves are oblong-lanceolate and bipinnatifid, the upper ones becoming less and less divided. The flowers are two inches long, between bell-

shaped and funnel-shaped, with a limb of five rounded spreading lobes; they are often described as solitary in the leaf-axils, but in vigorous specimens they grow in pairs, as in the figure, and they are produced abundantly towards the latter part of the summer. The other species referred to above, *G. Pedicularia*, is a plant of smaller but of more branching growth, with much more deeply-cut leaves, and having smaller and less abundant flowers, varying in colour from citron-yellow to deep yellow.

The seeds should be sown in a cold frame, or if deferred till summer, in a sheltered seed-bed out-of-doors. As the American authorities give wet woods as the habitat of *G. quercifolia*, and Mr. Robinson found it in spongy ground above the Falls of Niagara, it seems probable that the plant requires to be grown—as so many other American plants do—in damp, boggy ground; and this may be the explanation of the non-success of our cultivators when it was introduced before—some fifty years ago.—T. M.

ON CROSS-BREEDING PELARGONIUMS.—No. II.

BETWEEN the process of fertilization and the ripening of the seed, all that is necessary is to give the mother-plant room, air, and sunshine, and a fair supply of water, for if permitted to suffer too severely from drought, the fertilized pip, like the foliage, will turn yellow and fall.

As soon as the seed has ripened, and shows symptoms of a desire to take wing and be off, pick it, and enclose it in one of the pieces of demy paper; pencil the corresponding number of the tally attached to the stalk of the truss upon it, and at once deposit it in a tin-box, with a close-fitting hinged lid, which box should be kept in a dry, cool position, as exposure of the seed to the sun's rays or heat after it has been gathered will render it slow to germinate, and cause disappointment, by the irregular manner in which and the lengthened period before it makes its appearance above ground.

In proceeding to plant the seed, Note-book No. 2 comes into requisition, into which I first enter "a number" and the date of planting; next, the number of the tally of the seed I am about to plant, also stating the name of the plant it came off, and of the plant it was fertilized by. I prefer planting the seed round and pretty close to the edge of a 48-sized pot, into which I first place plenty of drainage, then fill two-thirds full with my ordinary compost (see 1871, page 221), the remaining third I fill in with a compost consisting of one-third of the above, one-third peat, and one-third silver sand (well mixed and finely sifted), pressing it evenly and tolerably firmly down. Next, taking each seed separately in my forceps, I insert them to about the depth of a quarter of an inch into the mould, leaving the feather of the seed out; ten seeds will just go round, leaving a fair distance between each seed. I then take a wooden label and pencil on one side of it the number of the entry in book No. 2, and on the other the number of the tally from the paper in which the seed had been enclosed.

I plant the seed at three periods of the year, viz., the middle of August, the

middle of October, and early in February. For the first sowing I prefer to place the pots on a south border in the open air, with an arrangement for shielding them from the direct sun's rays and heavy rains; for the two latter sowings I place the pots on dry bottom-heat, in the propagating department of my house. I water well with a fine rose after planting, but sparingly when they are up. The point to ensure their speedy vegetation is to shade them; they like heat without the drying influence of the direct sun-ray, and moisture without stagnant wet or damp hanging on their seed-leaves, which causes them to fog off. The sooner the seed is planted after being gathered the better, as it will then very quickly germinate, in which case, and under favourable circumstances, it will all be up in ten days, at most.

The August-sown seedlings are fit for transplanting into thumb-pots about the middle of October, the October sowing early in February, and the February ones in April. For this transplanting I use light mould, that is, my ordinary compost, considerably lightened by the addition of extra silver-sand and a little peat. Care should be taken that it is in good condition, neither too damp, nor too dry. Water must be very sparingly given until they have taken hold; in fact, I do not water them at all, if I can possibly avoid it, for fully ten days after transplanting, or there is fear of their shanking. I put into each pot a fac-simile label of that in the seed pot. I shift them into large 60's or 54's, at convenience, after they have fairly filled the thumbs with roots, using my ordinary compost.

The first week in June I place them all out in an open position where they get the full benefit of sun and air. As they show flower I take them into the house, preferring their flowering under glass to judge of their qualities; those that I consider good or worthy of further trial, I put a second label to, with a number corresponding to an entry I make in note-book No. 3; wherein I note, at the same time, the colour, size, and quality of flower, the habit of growth and parentage.

Whether fertilizing, or raising the seed for foliage varieties, or those for flower, the process I adopt is precisely similar, with one exception, viz., that as the seedlings of those fertilized for variegated foliage make their appearance, I carefully examine the cotyledons of each, and those in which I can perceive no markings, but that are perfectly green, I at once pull up, for those would grow up and remain green zonals to the end; while those with the slightest marking on either cotyledon would (however green the plant might grow up) at some period or other, perhaps after a lapse of years, break into variegation.

The after treatment of the seedling plants of the foliage section differs somewhat from that of the flowering; they are more delicate, weaker in constitution, and are benefited by being planted out into the open border, and there allowed to develop their qualities, they gaining by the additional robustness obtained by the freedom of their roots; while the seedling plants of the flowering section are apt to become too vigorous, running too much to foliage, and require the restraint the pot secures to develop the qualities of their flowers. When any portion of the

variegated seedling has definitely assumed variegation, it should be severed from the parent plant, and established on its own roots; until this is done, it is impossible to say whether it will be worth propagating and naming, for that variegation which on the seedling plant appears to be most promising often becomes worthless as soon as it gets on to its own roots, not only losing its colour, but becoming so weakly as to be incapable of being propagated.

In breeding for the variegated section, the necessity for retaining a large number of plants for a lengthened period, that have shown markings in their cotyledons, and yet grown up green, is inconvenient to the amateur with limited space at his command. They may frequently be induced to develop their variegated qualities by picking out the centre of their head, and so driving them into breaking round the neck of the plant, from the eye in fact of the marked cotyledon; it is also found desirable to stop a branch in the same way, to drive into breaking the eye at the axis of a perfectly marked leaf, the shoot therefrom frequently assuming the same perfection of markings.

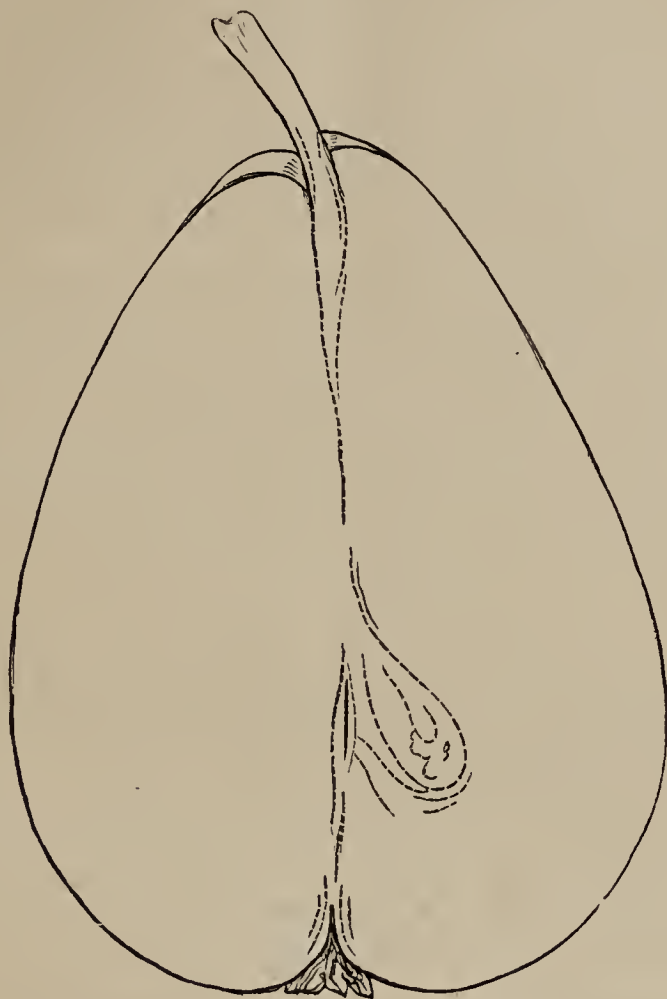
My fourth note-book I employ to note down observations as to the results of my crosses, remarking upon how far my predictions in book No 1 had been verified, or the reverse, the result of colour-blending, the resemblance to either parent, in fact to note every incident that occurs to me to be worth recording. I employ a fresh set of note-books for each year, retaining the old ones tied up in years; and each note-book has a label on its cover, with the description of its contents, to facilitate reference.

I have omitted to state that the earliest period at which I find fertilization successful, is the first week in March, and the latest with any chance of the seed ripening, the last week in October.—JOHN DENNY, *Stoke Newington*.

CYPRIPEDIUM SPECTABILE.

PERHAPS amongst the many species of Terrestrial Orchids there are few which, being hardy, deserve so much attention as this, and its ally *C. Calceolus*. *C. spectabile*, as is well known, is, with six or seven other species, a native of the Northern States of America. It is a very showy and exceedingly interesting object, requiring very little outlay of time or attention to grow it successfully. Our native *C. Calceolus* is a very fitting associate for it as regards cultivation, the treatment being that of hardy but somewhat delicate plants. They may be grown most advantageously in a cold-pit, though a warm, sunny nook out-doors is well adapted for them, if sheltered from excessive rains. Under pot-culture they should be potted somewhat liberally in a compost of sandy yellow loam and leaf-mould, and when new growth has commenced they may be exposed in a sheltered position to air and sunshine, and encouraged by copious waterings, until the flowers open, when less water should be given. When the blossoms have gone past, the plants should be plunged over the pot-rims some 2 or 3 inches deep in old dried tree leaves, there to remain through the winter, care being taken that the crowns are buried to the full depth indicated

the whole time. By means of a sash-light or other contrivance excessive rains must be warded off, and a little more shelter must be given should severe frost set in. In this state they may remain until they push through the soil in the spring, when a more favourable situation should again be found for them.—WILLIAM EARLEY, *Valentines*



JALOUSIE DE FONTENAY VENDEE PEAR.

IN this Pear we have a truly delicious fruit, which has somehow or other never received that notice which it deserves. For many years it has come under my observation, and been placed A 1 on my list of pears which it is desirable to grow. It is unfortunate in one respect, which may account for its being overlooked, viz., that it comes into use during the general glut of fruit, when so many of our fine pears are in season, *i.e.*, October.

The fruit is of medium size, very regular and even in outline, of an obtuse or rounded pyriform shape. Skin smooth, warm cinnamon-russet on the sunny side, pale greenish yellow on the shaded side, and generally besprinkled with small russet dots or specks. Eye small, open, set in a very shallow, evenly-formed cavity. Stalk three-quarters of an inch long, inserted with a very slight depression. Flesh beautifully white, buttery, melting, with a very peculiarly rich aromatic flavour, altogether pleasing. Season October. This variety succeeds well on the Quince, the tree forming a nice pyramid or cordon, and being very fruitful and hardy. It is a sort truly worthy of extended cultivation.

In *Hogg's Fruit Manual* the following synonyms are given, viz.:—*Belle*

d'Esquermes, Fontenay Vendée, Jalousie de Fontenay. The description in the Manual, however, scarcely agrees with that given above, from fruits cultivated in the gardens of the Royal Horticultural Society, Chiswick.—B.

THE CULTIVATION OF CELERY.

TO grow this vegetable to a high state of perfection, we are usually recommended to use strong manure. For market purposes, such advice may answer very well, as bulk of produce is of greater value than quantity. For home consumption, however, the case is altogether different, and what we so much require is solidity and flavour.

For many years I followed what might be called the high-pressure system of cultivation, and I daresay should have continued to do so, had I not been compelled from necessity to substitute decayed leaves instead. I do not indeed depend upon leaves entirely, as a few dressings are given of phosphate of lime, or guano; but I find, under this treatment, that the growth is slow, consequently the tissue is more closely united, while the flavour is excellent, and the plants resist the extremes of cold better. I have tried the same variety under both systems, and can with confidence speak of the superior character of the Celery produced by the latter. I am satisfied that very many of our vegetable diseases spring from, or rather are the effect of over-manuring.

Unless it be a few rows for early use, I only have our Celery moulded up twice; first when half grown, and lastly at the end of October or beginning of November.—ALEXANDER CRAMB, *Tortworth Court.*

FLOWER-GARDEN MANAGEMENT.—FEBRUARY.

ALL arrangements for the coming season should now be decided on, in order that preparations may at once be commenced, for it is only by the judicious and timely consideration of these matters that a satisfactory result can be obtained afterwards. All alterations in the flower-garden should be completed as soon as possible, so as not to interfere with the planting when the season arrives. Trees and shrubs of all kinds may be planted in open weather, but it is desirable to finish this work as early as possible. Plant *Roses* in deeply-dug, well-manured ground; standards as soon as planted should each be tied to a neat stake, to prevent their being blown about with the wind. In open weather continue the pruning of the hardy kinds. Climbing *Roses* on poles, trellises, and against buildings may be undone, thinned out, and fastened afresh. Plant *Anemones* and *Ranunculuses*; protect *Hyacinths*, *Tulips*, &c., from frost by covering with mats; trap Rats and Mice, which are often great pests among Bulbs and various kinds of roots, especially in winter, when other food is scarce; look over *Pinks*, *Carnations*, *Pansies*, *Primulas*, &c., and pick off all dead leaves; and dress beds, borders, or margins where *Winter Aconites*, *Snowdrops*, *Crocuses*, *Anemones*, *Primroses*, and other such early spring flowers are appearing.

IN-DOORS.—With the gradual increasing heat of the sun most *Hard-wooded*

Greenhouse plants will now be moving, and will require more attention. In dull weather they will not require much water. We sometimes during this month have a continuance of clear weather for several days together, warm sunny days following a succession of severe frosty nights—conditions which render fire-heat absolutely necessary. In such weather the soil in the pots, particularly over pipes or flues, is soon dried up, and frequent waterings become necessary. The water should be kept in the houses during the night, and given to the plants in the morning. Admit air freely in mild weather, but be careful to guard against cold, cutting winds. A night temperature of 40° in frosty weather will be sufficient. Continue the training of *Pelargoniums*, and shift the late stock. All *Soft-wooded plants* will now begin to grow freely, and must be carefully watered. Cuttings of *Fuchsias*, *Pelargoniums*, &c., should now be put in for autumn blooming. Give plants in pits and frames all the air possible, and continue to pot off all autumn shrubs and cuttings, and place them in a gentle heat until they have made fresh roots. Make a hot-bed for striking cuttings of *Verbenas*, *Petunias*, *Iresines*, *Coleuses*, *Lobelias*, and such other plants as will be required for bedding out.—M. SAUL, *Stourton*.

NEW FLOWERS OF 1871.

AS numerous as ever in kind, and in many instances of high-class quality, the year 1871 has left a generous bequest of new flowers. A hasty glance at some of these may be given as a fitting supplement to the new plants, fruits, and vegetables of the same year:—

The gorgeous AMARYLLIS may fitly lead the way. High-coloured flowers like *Brilliant*, *Chelsoni*, and *Maculata*; and the more delicate hues of *Hybrida gigantea*, *Marmorata perfecta*, and *Prince Henry*, give a list of new forms of almost unexampled beauty. The batch of new ANTIRRHINUMS raised by Messrs. Downie, Laird, and Laing contain some flowers having much novelty of marking, and of high quality; they help to gild the declining summer months, and in their fair floral beauty are “signs of autumn’s mellow reign.” In AURICULAS (Alpines), *Marquis of Westminster*, *Sultan*, and *Thomas Moore*, Mr. Turner’s reputation as a successful raiser is fully maintained, and excellent additions are made to fine forms already in cultivation. A promising green-edged variety named *Alderman Wisbey*, is the only addition to the show class. M. Van Houtte’s batch of new AZALEAS augments our numerous collections of these showy spring-flowering plants. It comprises *Alice*, *Comtesse de Beaufort*, *George Loddiges*, *Madame A. Hardy*, *Marquis of Lorne*, *President de Ghellink de Walle*, *Superba nova*, and *Vuurwerk*, among others. A rosy-pink variety named *Comtesse de Flandres*, and *President*, deep pink, were also seen in fine condition. *Marvel*, a charming variety, of the amœna type, bearing purple flowers, will be very useful. Three new BEGONIAS of the bulbous-rooted deciduous kind, claim attention, namely, *Chicago*, *Gravelotte*, and *Multiflora elegans*; the latter is singularly free of bloom, and so continuous as to be termed a perpetual-flowering variety. CLOVE CARNATION *Miss Joliffe* is a flesh-coloured flower, very free, and excellent for forcing. Among HARDY CLEMATISES, *Lady Maria Meade*, pale mauve-lilac; and *William Cripps*, deep violet-purple, were very promising indeed. COLEUS *Tryoni* is so distinct in character,—the glowing crimson base of the leaves having a deep bright golden apex—that it must be ranked as one of the most valuable introductions of the year. *Favourite* and *Lady Leigh* are also good additions to these popular foliage plants. Large-flowered types of the useful CYCLAMEN PERSICUM can now be chronicled; *Giganteum* and *Grandiflorum* have very large and finely coloured flowers; and *Snowflake*, the flowers of which are also of good size, is a great improvement on the pure white forms.

New DAHLIAS were very numerous produced during the past year. In the show class, yellow selfs are represented by *Golden Beauty* and *Yellow Standard*; scarlet and crimson hues by *Hope*, *James Wilder*, *John Standish* (the best flower of the year), *John Batten*, *Mephis-*

topheles, *Old Port*, and *William Keynes*, the latter being of a pale orange-red hue. *Ranunculus* is of a bright purplish rose-colour; and *Kate Haslam*, *Mrs. Bennett*, *Mrs. Waite*, and *William Laird* have either lilac, pink, or peach shades. *Souvenir de Herbert Turner* is a promising white self; and *Lady Herschel*, *Livonia*, *Maid of Essex*, and *Marchioness of Lorne* belong to the edged flowers. Fancy flowers are not nearly so numerous; the leading flower is unquestionably *Mrs. Saunders*, yellow ground, tipped with white; and *Laura Haslam* is in the same way, the ground-colour being primrose. *Admiration*, *Bucks Lass*, *Dolly Varden*, also a good flower, and *Mrs. Parkes* were of promising character.

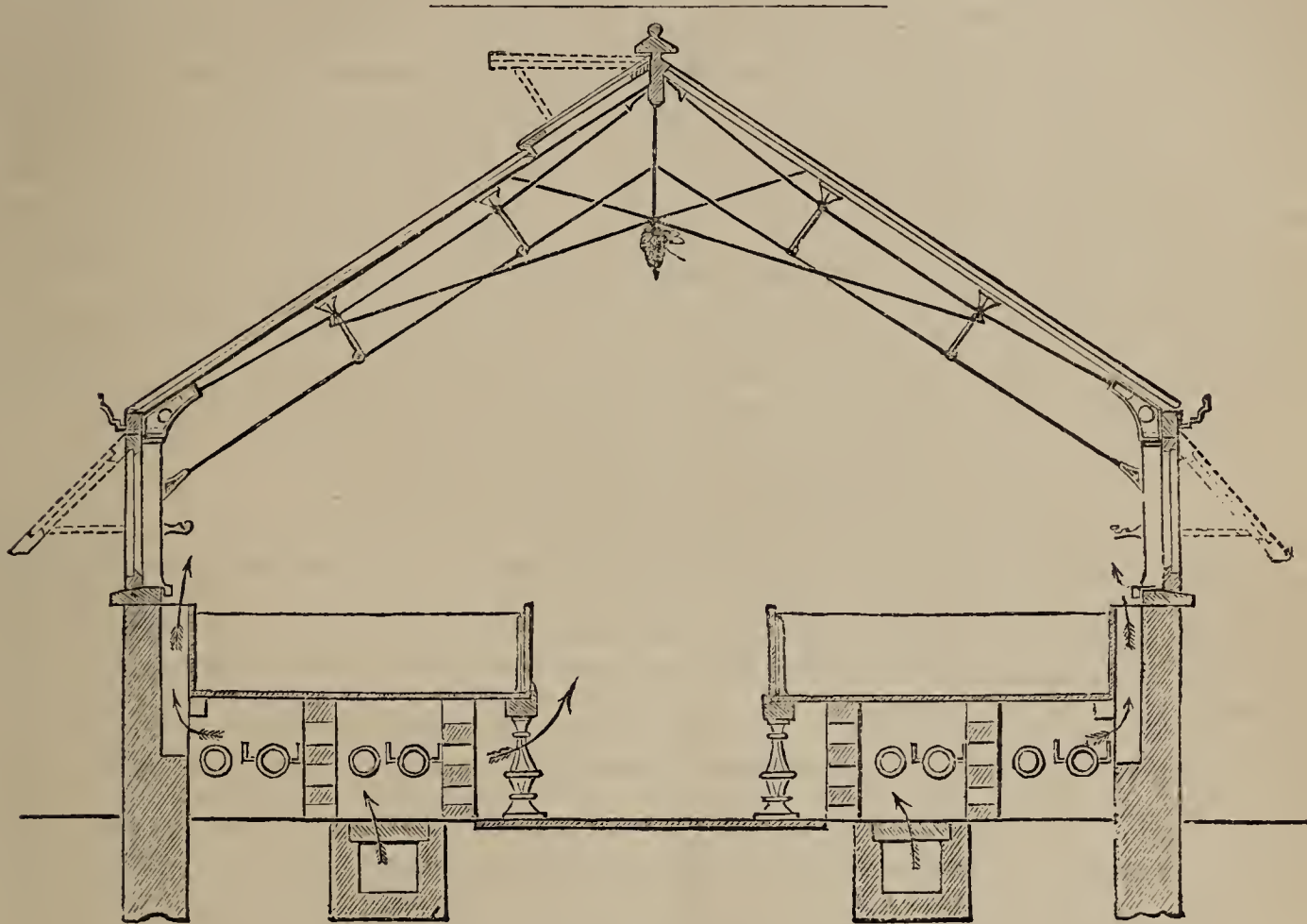
Year by year an abundance of new FUCHSIAS are announced, but they are rarely met with, and but very few opportunities are afforded for their being seen. Mr. Cannell announces twelve new varieties, and of these *Striata splendida* and *American Banner* are said to have handsomely striped corollas. In the number of its striking new varieties, with their massive and finely-formed flowers of varying hues and noble spikes, the GLADIOLUS may be denominated the most markedly improved flower of the year, as many as twenty varieties of English origin having received First-Class Certificates. The greater part of these were raised by those most successful cultivators, Messrs. Kelway and Son, of Langport; *Talisman*, one of M. Souchet's raising, also received the same award. Mr. Standish's new variety, *Alice Wilson*, illustrates a very interesting break, attained by crossing the imported species *G. cruentus* with hybrids of the *G. gandavensis* section; in this instance the flowers are circular, and the petals evenly reflexed all round like those of a lily. GLOXINIA *Rev. H. H. Dombrain* is a fine and striking variety, of a rich reddish-crimson hue. An occasional glimpse at the new HOLLYHOCKS announced by Mr. William Chater, obtained during the past summer, showed them to possess remarkably fine quality; the clear, vivid scarlet of *Walden King*, the glossy black maroon of *Black Gem*, and the clear, bright yellow of *Golden Drop* were particularly noticeable. *Jeannie*, *John Stewart*, *Peerless*, and *Rose of Sharon*, from other growers, appeared to be good additions also. Five new HYACINTHS received First-Class Certificates last year; ten years hence some of them may be offered for sale; it is therefore useless to describe them now. Some very useful BEDDING LOBELIAS of the *Erinus* section put in an appearance during the summer; *Brilliant*, *Celestial Blue*, (one of the *pumila* section), *Omen*, *Purple Prince* (having a great deal of purple in the flowers), *White Perfection*, and *Snow*, two pure white varieties of *L. speciosa*, were also of good quality. The two latter proved quite pure grown in the open ground. But little is seen of the new PANSIES, and yet they are constantly and plentifully produced. Messrs. Dicksons and Co., and Messrs. Downie, Laird, and Laing, of Edinburgh, are the leading raisers, and each firm announces several new varieties both of the show and fancy sections; the former have also some charming bedders. The Show PELARGONIUMS have already been described (see p. 260, 1871), as well as the new Nosegay and other varieties raised by Mr. George (p. 18). In *Amaranth*, *Corsair*, *Miss Saunders*, *Rose Bradwardine*, and *Thomas Adams*, among others, Mr. J. R. Pearson has varieties of undoubted merit. *Ianthe*, *Sir C. Napier*, and *Wellington*, raised by Dr. Denny, represent the finest of the ordinary zonal section; while Mr. Cannell announces three striped varieties, namely, *Arlequin*, *Coquette*, and *Elsternixe*. These will certainly be novel, and generally acceptable because so. The gold and silver tricolors are reinforced by *Alice Maud Mary*, *Baroness Burdett Coutts*, *Countess of Flanders*, *Gem of Tricolors*, *Lady Dorothy Nevill*, *Mrs. Rousby*, and *Mr. Rutter*, all shown in fine condition; while among the gold and bronze section, *Bronze Queen* and *Marechal McMahon* are finely marked, distinct, and effective.

The lists of PENTSTEMONS are now so completely filled with fine varieties that all the new productions must be of general excellence. Our home raisers as well as the Continental growers announce many new candidates for favour, and the same may be said of the Herbaceous PHLOX. Earnestly commending each of these well-known flowers to the notice of flower gardeners, I pass on to the PETUNIA, to mention *Coquette* and *Pantaloon*, two varieties of some promise. *Princess Louise*, a good double variety, can also be commended. New PICOTEEs were unusually numerous, and in *Ada Ingleton*, *Delicata*, *Miss Ingleton*, and *Morning Star* could be seen flowers of great excellence. Scarcely less promising were *Mr. Brown*, *Mrs. Brown*, and *Mrs. Ingram*. Four splendid PINKS were shown by Mr. Turner, namely, *Dr. Masters*, *Godfrey*, *Lady Blanche*, and *Shirley Hibberd*; the first and last of immense size, great substance, and fine marking. *Princess Louise*, a vivid scarlet forcing pink, is a very great acquisition. Of PRIMULAS, the glorious *P. japonica*, with its varieties, needs only mentioning in this relation; it is one of those flowers that take the horticultural world by storm. Two single varieties of *P. sinensis*, namely, *Princess Louise* and *Waltham White*, were very attractive indeed, the latter quite distinct in character.

Some grand RHODODENDRONS have come to the fore, as witness *Helen Waterer*, *Kate Waterer*, *Perfrundum*, and *Victurum*, in Messrs. J. Waterer and Son's collection; and *The Bride*, a remarkably fine white hybrid Bhotan variety. The following ROSES have all received First-Class Certificates; and a season's cultivation has tested their good qualities

most successfully, viz.:—*Climbing Victor Verdier*, *Comtesse d'Oxforde*, *Louis Van Houtte*, *Marquis de Castellane*, *Paul Neron*, *Princess Beatrice*, and *Princess Louise*, all hybrid perpetuals; the first and last climbing varieties; and *Belle Lyonnaise* and *Earl of Eldon*, tea-scented. *TROPÆOLUM Mrs. Bowman* was a promising variety of the Lobbianum section, and looked well adapted for bedding purposes. *VERBENAS Emma Weaver*, *Lady Braybrooke*, *Lady Edith*, *Lady Gertrude*, *Mauve Queen*, and *Pluto* were all of first-rate quality, large in size, stout in texture, and perfect in shape. There are other varieties of excellent properties, but those named were strikingly good.

It will thus be seen that there is no lack of new flowers, and the products of the past year are fully up to the average of those of any year that has preceded it.—Quo.



A MODEL PLANT-HOUSE.

THOUGH originally designed and constructed for forcing purposes, the accompanying figure represents a plant-house of the most approved structure, and which has, moreover, been marked by success in its use. It occurs in the gardens of classic Newstead, and was built by Mr. Messenger, of Loughborough. It is what is called span-roofed, with a pathway in the centre, and a bed 4 ft. 6 in. in width on each side, the bottom of this bed consisting of strong slate slabs, which can be raised or lowered at pleasure by means of brick ledges at the sides, so as to be brought up level with the top, or sunk so as to form a bed of soil or plunging material of any depth up to 2 ft. Under these beds are placed the hot-water pipes, here four in number, a portion of them being troughed to serve as evaporating pans. Beneath the pipes on each side is an air drain, supplied by shafts from the outside, and through these a copious supply of fresh air, as indicated by the arrows, may be secured in the worst of weather. The house is also ventilated through the side-lights and at the ridge of the roof, as indicated

by dotted lines. From the mode of construction abundance of light is admitted to the interior.

No better model than this need be devised for either a plant stove or a forcing house, or with certain modifications as regards heating, for a greenhouse. It is roomy; it is light; it is thoroughly ventilated; it is amply heated for a hot-house, and of course would need less piping if intended for a greenhouse. It has a plunging bed placed over the heating apparatus, which in the case of stove plants, or for the culture of pot-vines, or melons, or cucumbers, would be especially advantageous. Even if used as a greenhouse, we believe, although it is not commonly adopted, that the plunging bed would be found a real acquisition, inasmuch as it would obviate the necessity for the perpetual watering, which is one of the most difficult of all operations to carry out efficiently in the culture of pot plants, on account of the risk which is always run of going to an extreme in either direction. The plunging or half-plunging of the pots, in the case of greenhouse plants, would render less frequent the necessity for applying water, and thus neither would the fertilizing properties of the soil be washed out, nor the soil itself become soddened by the disturbance in its mechanical condition which frequently results from repeated and copious waterings. Hence we look upon this as in every respect a model plant-house.—T. M.

NOTES ON SOME NEW PEACHES AND NECTARINES.

IN the *Florist and Pomologist* for 1870 is an illustration of one of the new peaches—*Lord Palmerston*, much more highly coloured than it ever came with me under glass. I fear its large size may induce many people to plant it, but when they come to put their teeth into it, they will repent having done so. I have fruited it for two years in a late house, its fruit being very large, but its flavour and the texture of the flesh are both bad—worse in 1871 than 1870, though in neither year was it good with me. I have put buds of another sort into it, as I did not want to remove it, the stock being very clean and healthy.

In the same house I put in a quantity of *Princess of Wales Peach* in 1869, and last year I had three or four dozen fruit, very large, and of the most exquisite flavour; indeed, I thought it the best-flavoured peach I had tasted during the season. This was budded on a *Bellegarde Peach*, and, strange to say, the fruit of the *Bellegarde* came much paler than usual, approaching more to the colour of the *Princess of Wales*, which is a beautiful creamy white, with streaks of pink on the sunny side.

Prince of Wales, another of the new Peaches, I have fruited for three years, and a very good-flavoured, racy peach it is, having a deal more colour in it; the fruit has not been large with me, but the tree is not very vigorous, and it may improve in that respect.

Amongst the early Peaches, I have only planted out permanently *Dr. Hogg*, the very early ones being so small. I have fruited *Dr. Hogg* now for two years,

and I think it a very finely-flavoured peach, which should find a place in every early peach-house, as nearly every flower seems to set, and when in bloom its large flowers make a grand display. Mine are now (January) over, but for the last three weeks they have been beautiful. *Stirling Castle*, another of the recently introduced Peaches, I find very good in flavour, and a good forcer, coming in with me in the same house a little before Early Grosse Mignonne, a fine old peach. Another peach which I think will be well worth growing is *Stump the World*; it is not early, but I have it in the early house, as it forms a nice succession.

Of the new Nectarines, I can speak well of the *Pine-apple*: indeed, I think it is the finest Nectarine out. Its appearance when well finished is grand, and it has a very rich flavour; it is not, however, an early Nectarine. The *White Nectarine* I procured, but it unfortunately died with me from fungus about the roots. *Albert Victor* I have fruited for two years; it is a large fruit of good flavour, but there is about this and the older variety, *Victoria*, something forbidding in the green appearance they have even when ripe, that I fear they are often passed by at table on that account. *Albert Victor*, however, forces well, and is a good setter. I hope to try shortly some of the new early Nectarines, and then weed out the worst.—JOHN CLARK, *Studley Royal*.

FRUIT CULTURE.—FEBRUARY.

WHEN the weather is favourable, pruning and nailing should be pushed forward with all possible despatch. *Apricots* should be finished immediately, as there is every appearance of the blossom opening early this year, if not retarded by severe weather. *Gooseberries*, *Currants*, *Filberts*, and all standard and bush fruit-trees should be open in the centre, to admit the sun and air. Fruit-trees may still be planted in open weather, though it should never, when possible, be delayed until now, as the dry, parching winds of March tell on late-planted trees.

IN-DOORS.—Attend carefully to *Pine* plants in all stages. With the increase of solar light, the day temperature may be allowed to rise a few degrees higher than during the past month, but the night temperature should remain about the same; admit air daily, if possible. Plants that are showing fruit and in flower should have a dry atmosphere; and they should be carefully watered when they require it. Plants that are swelling off their fruit should be well attended to in watering when they require it, and they should have a moderately moist atmosphere. See that the bottom-heat does not decline below 85°. In forcing, and indeed in every department of gardening, success depends in no small degree on attention,—constant, unceasing attention to all matters, even to minutiae. The *Vines* now blooming must be carefully tended; maintain a dry atmosphere and a temperature of 65° for *Hamburgs* and 70° for *Muscats* at night, allowing from 12° to 18° rise during the day. Attend to the thinning of the berries as soon as possible after they are formed. Stop and tie down the shoots in the succession houses as they advance, and keep all inside borders well watered.

Give air at every favourable opportunity, always giving a little early in the morning, increasing it during the forenoon as the weather permits, and closing up early in the afternoon. *Peach* trees whilst in flower should have all the air possible; thin the fruit when set, leaving rather more than are wanted for a crop until after stoning; disbud the shoots, retaining no more than are required, and as they advance keep them neatly tied to the trellis. Start late houses. Syringe *Figs* on mornings and afternoons; keep them well watered; maintain a night temperature of 55° , and admit air freely in mild weather. Give *Strawberries* in flower abundance of air, and when the fruit is set, keep them close and warm, giving them liberal doses of liquid manure; introduce a fresh batch of plants about every ten days for succession.—M. SAUL, *Stourton*.

GOLDEN CHAMPION GRAPE.

I QUITE agree with Mr. Freeman in what he says (p. 22) respecting the Golden Champion Grape. We have not tried it sufficiently long to speak in a very positive manner about it. No doubt it is difficult to manage, and requires peculiar treatment, but when well grown it is the best of all white grapes.

It is to be regretted that gardeners do not use more caution in condemning a new fruit before they have had sufficient experience with it. Some have even gone so far as to censure the Fruit Committee of the Royal Horticultural Society for granting this variety a certificate. I bought a plant of it the first year that it was sent out, and inarched it on a Hamburgh the same season. Next year I grafted and inarched it on permanent vines in two more houses. In 1869 I had about a dozen bunches from the three rods; the berries were immense, but some of them badly spotted, although the flavour was all that could be desired. Last season the same number of rods carried eighteen bunches. In two of the houses the berries were free from spot, and some of the bunches kept well two months after being ripe. It has one excellent quality lacking in some grapes—the flavour is good to the last. I look for great results from this grape next year, as I have a notion it will grow out of this tendency to spot, which seems to be constitutional.—J. DOUGLAS, *Loxford Hall*.

NEW DWARF MIGNONETTE.

WE owe to M. August Gebhardt, of Quedlinburg, the opportunity of presenting to our readers the accompanying figure of this new dwarf-growing, compact-habited, and very floriferous variety of *Reseda odorata*, which he calls *nana compacta multiflora*. It forms a dense semi-globular bush of about 10 in. high and 18 in. across, the robust and vigorous branches being clothed with dark green leaves, and decorated with innumerable close spikes of reddish-tinted flowers. These flowers are said to be produced without intermission from spring till late in the autumn, the blooming period being of longer duration in this than in any other variety, owing to the succes-

sional branching growths. Its dwarf habit adapts it for planting near the edge of the flower-border, while, if cultivated in good soil, it is said to have a fine effect as a single specimen; and that for pot-culture or for market purposes it cannot be too highly recommended. The figure we here introduce, and which was prepared from a photograph, seems to bear out this favourable description.—T. M.



RESADA ODORATA NANA MULTIFLORA.

ACACIA PLATYPTERA.

AS a winter decorative plant for the embellishment of the conservatory, this is one of the most effective and desirable I know, as it is of the easiest possible cultivation, and comes into flower without the slightest forcing, at a season of the year when gay plants to cheer us are most welcome. It is a quaint-looking, winged-stemmed plant, but it produces its flowers in the greatest profusion, and they have the additional advantage of continuing a long time in bloom. Moreover, the plant is a free-grower.

After blooming, the weak shoots should be cut clean out, the shapely contour of the plant being maintained by heading back straggling shoots. The most suitable compost for it will be found to consist of two parts sandy loam, to one of turfy peat and sand. If, after potting, the plants can have the benefit of a close greenhouse temperature, this will start them into vigorous growth. They must be kept near to the glass, and be freely exposed to the full sun, having also an abundance of air as the season advances, so as to induce a stubby growth. Early in June the plants should be placed out-of-doors, where they will do far better than under glass, since the wood will become more perfectly matured, and a more floriferous state be promoted. By the middle of September the plants may

be returned to the greenhouse. The shoots will then be studded with embryo flowers, which will be developed in the course of a few weeks; the plants may then be transferred to the conservatory, where they will continue in flower until mid-winter.

This *Acacia* is propagated with the greatest facility from the fleshy parts of the roots, in sand or peat under a glass. Among insect pests, its only enemy is the thrips, which must be kept under. This is one of those useful neglected plants that should be more generally grown.—G. WESTLAND, *Witley Court*.

RENOVATING OLD APPLE TREES.

SOME years back, when taking charge of a place in the vicinity of London, I found numbers of old Apple trees that had borne but few fruit for many years, and these so little worth that my employer decided to remove them all, and plant a new orchard. Not liking the idea of having no apples for some years, I begged that they might remain, at least the best of them, telling my employer that I thought I could restore them; and although he smiled at the idea, he consented to allow them to stand.

The trees were of large size, full of small superfluous wood, and literally covered with moss. I began by cutting the middle out entirely, and pruning the sides very severely. This being done, the trees were scraped to remove the moss in part. Fresh lime was then mixed up with hot water, to the consistency of paint, and every part was well washed over with it. The tops being finished, and knowing my reputation to be at stake, I commenced with the bottoms, by having a trench cut round each tree 3 ft. deep and 2 ft. wide within 4 ft. of the bole, cutting all roots close off to that distance. On examining the roots, I found them to be as dry as pepper; I therefore took off the top spit, bored large holes in the mass, and gave a good soaking of dung-water, filling in the trench with lightish turf and road-sand, and mulching over all with good cow-dung.

The first year I was only rewarded by a promise, but the following one I had a truly grand crop of fine fruit, so clear and spotless, that when lying on the fruit-room shelves I was frequently asked whether we polished our apples. I may add, that my excellent employer was delighted, and when any of his gardening friends complained of having unfruitful apple trees, he would reply, "Mine were the same two years ago, but I happened to meet with an apple physician, who soon cured them all."—R. GILBERT, *Burghley, Stamford*.

NOVELTIES, ETC., AT FLOWER SHOWS.

THE winter months are never very prolific of new flowers, so that the record of these at this season is necessarily limited. At the Royal Horticultural Society's meeting on the 6th December last, a very beautiful high-coloured *Cyclamen*, named *Queen of Crimson*s (F.C.C.), was shown by Mr. Henry Little, of Cambridge Park, Twickenham; this flower, while it gave one of the deepest shades seen in these charming winter flowers, was very bright and effective

also. This was one of the earliest to bloom in a collection of seedlings of great value in the hands of Mr. Little, who has probably the finest and choicest collection of Cyclamens in the United Kingdom. Messrs. Standish and Co., Royal Nursery, Ascot, exhibited in a collection of nine hardy evergreens of the Yew or Cypress type a very striking golden Yew, *Taxus fastigiata aurea*, the foliage of which may be said to be bathed in gold, and which does not burn in light soils like some of the striped golden kinds. It originated some ten or twelve years ago among a batch of seedlings of the Irish yew, and like its parent variety, this new golden form has a compact fastigiate habit. A clayey soil and a shady position best suit all the variegated forms of the yew.

On January 17 some very beautiful forms of the double-flowered *Primula sinensis* were shown by Messrs. E. G. Henderson and Son, and certificates were awarded to the following, viz.:—Emperor (F.C.C.), rosy-carmine, tinted with purple; Exquisite (F.C.C.), delicate pink, a charming variety; Magenta King (F.C.C.), rich bright carmine red, not so full as the others, but very handsome; and Princess of Wales (F.C.C.), pure white. The first named belongs to the Fern-leaved section. *Bouvardia jasminoides*, as an invaluable winter-flowering plant, deserves more than a passing notice. Some plants in 32-pots were shown on this occasion by Messrs. Standish and Co., by whom it is largely grown for its delicate white blossoms; and as bearing on its culture it was stated that these plants are grown close under the glass on the shelf of a span-roofed house, in which were grown Gardenias plunged in a bed of dung and leaves above a heated tank. The nice bushy plants were literally laden with precious snow-white flowers.—R. D.

GARDEN GOSSIP.

THE subject of *Dishing up Fruit*, and of the supply of *Garnishing Leaves* for the purpose, is one of some interest and importance at this season of the year. Mr. Knight, of Floors, has recently recommended for this purpose the growth of *Passiflora quadrangularis* and *Cobæa scandens variegata*.

“Grown in a temperate house, the *Passiflora*,” he says, “makes a later growth, and during winter furnishes an abundance of fine large limp leaves, 8 in. or 10 in. long and 6 in. broad, which recommend themselves to every housekeeper; for while *Ivy* leaves have a disagreeable odour, those of the *Pelargonium* possess an odour which at least seems out of place. The *Cobæa* is also very useful, producing as it does large quantities of lively, crisp-looking leaves, which for some purposes, and for small dishes, will be found appropriate.” Mr. Clark, of Roehampton, suggests the use of the leaves of *Abutilon striatum*, which, with their fine dark green colour, are first-rate for this purpose. He also thinks *Abutilon Thompsoni* would be better than the variegated *Cobæa* for those who do not object to variegated leaves; and further recommends *Selaginella denticulata* as good for a basis, as it looks so nice by gas or candle-light, and is so easily grown. Mr. Armstrong, of Hendon, always uses for winter garnishing the leaves of the *Portugal Laurel*, which have no appreciable odour.

— A NEW Insecticide, called *Calvert's Chemical Compound for Destroying Plant Pests*, has been introduced by Mr. Calvert, of Sabden. It is to be applied by means of a chemical wash-bottle, and thrown against the plant in the form of spray by blowing through a bent glass tube. Applied while tolerably hot, at the strength of about 2 oz. to a quart of water, it kills scale, mealy bug, and thrips, and, except in the case of here and there a very young leaf, does no damage to the plants. The inventor recommends dissolving the 2 oz. of the compound, in the bottle, by adding half-a-pint or more of

boiling water, and then after it is dissolved filling the bottle nearly full with cold water. We have found it most effectual when used warm, and in that state it seems to be an efficient destroyer of the insect pests which infest plants.

— THE following is a list of the *Certificated New Fruits and Vegetables* which have been distinguished at the Royal Horticultural Society's Meetings in 1870-71 :—

FRUITS.

Apple, Galloway Pippin—J. Backhouse & Son, Feb. 15, 1871.	Grape, Waltham Cross—W. Paul, Dec. 7, 1870.
Cherry, Bigarreau Noir de Schmidt—T. Rivers & Son, July 19, 1871. [1870.	Melon, Victory of Bath—R. Gilbert, June 29, 1870.
Cherry, Burghley Park—R. Gilbert, July 20, 1871.	Pear, Brockworth Park—J. C. Wheeler & Son, Sept. 21, 1879.
Grape, Ascot Citronelle—J. Standish, July 19, 1871.	Plum, Duke of Edinburgh—Dry & Son, Aug. 17, 1870.
Grape, Dr. Hogg—J. R. Pearson, Sept. 6, 1871.	Strawberry, The Amateur—S. Bradlèy, July 19, 1871.
Grape, Early Ascot Frontignan—J. Standish, May 17, 1871. [Aug. 17, 1870.	Strawberry, Royalty—J. Trotman, June 29, 1870.
Grape, Ferdinand de Lesseps—J. R. Pearson, Fruit-Gatherer, Bouckart's Patent—M. Verhulpen, Sept. 21, 1870.	

VEGETABLES.

Broccoli, Matchless—G. Cooling, April 20, 1870.	Cucumber, Tender and True—J. Douglas, May 3, 1871.
Cauliflower, Veitch's Giant Autumn—Veitch & Sons, Nov. 2, 1870.	Parsley, Covent Garden Garnishing—Carter & Co., Aug. 3, 1870. [6, 1871.
Cucumber, Luton Hoo—J. Cadger, April 19, 1871.	Radish, Californian Winter—W. Robinson, Dec. 3, 1871.
Roiffa, or Reed-grass (for tying)—R. Wrench & Sons, July 5, 1871.	

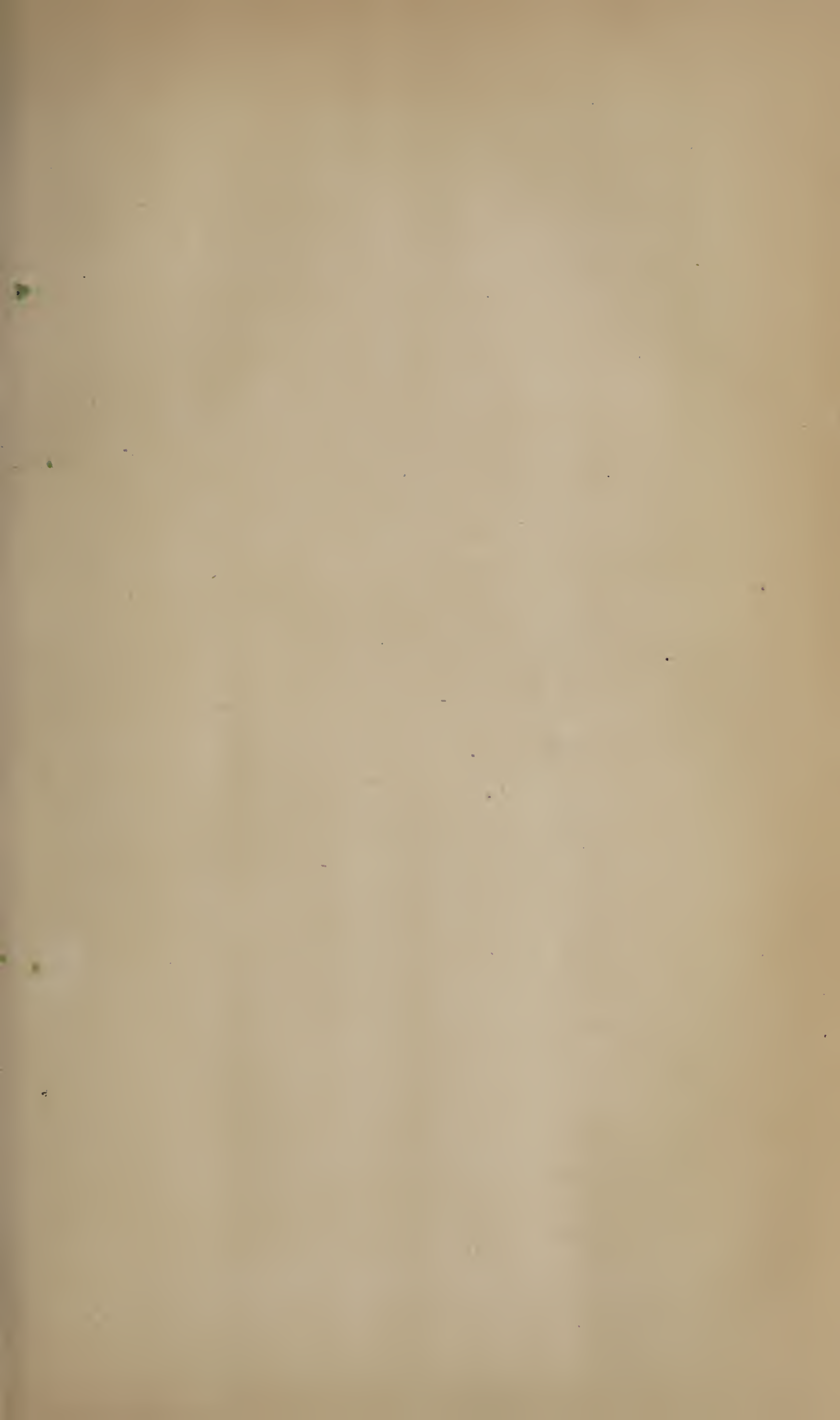
— WE have found *Frettingham's Liquid Compound*, applied by means of the Horticultural Vaporiser, to which we referred last year, at p. 192, a very efficient agent in the destruction of insects upon plants, effectually killing both thrips and red-spider, and when applied with care white and brown scale also, and that without in any way injuring the plants. The mealy-bug is killed when the liquid fairly reaches it, but to make sure of this a double application through the vaporiser is required, so that probably this pest would, in most cases, be more effectually got at by means of a sponge or brush.

— WRITING of *Aucubas*, Mr. Young, of Milford, observes :—" We have, I believe, four distinct varieties, or perhaps, species, of green *Aucuba*, viz., *viridis*, sent out as seedlings by Messrs. Veitch ; *vera* (or, as it is sometimes called, *ovata*), sent out by Mr. Standish ; and two distinct forms of *longifolia*, sent out by the above-named firms respectively. I believe that neither of these four varieties has shown the least disposition to sport (although there is a rather inconstant form called *longifolia variegata*, which I think was imported) since their introduction. As there are male varieties of the same type and habit as *viridis* and *vera*, I am inclined to think those two at least are distinct species. Of the two varieties of *longifolia* I am not aware that there is any male counterpart ; but a variety of *viridis*, with rather long and narrow foliage, has been sent out as *longifolia mascula* ; yet neither in habit nor general character has it any resemblance to that very distinct and handsome kind."

Obituary.

— JOHN ANDREW HENDERSON, of St. John's Wood, died on the 13th ult., aged 77. He was well known to a former generation of gardeners as the much-respected head of the Pine-apple Nursery Establishment in the Edgware Road, which, under his management, became one of the foremost nurseries of the metropolis, but he had retired from business for many years. He was an attached friend and earnest supporter of the Gardeners' Royal Benevolent Institution, and had been for many years one of its trustees.

— IN noting the death of Mr. BELLENDER KER, we stated by an oversight that he was once editor of the *Botanical Register* ; it was, however, Mr. Ker's father, also known by the name of Gawler, who filled this position.





Pelargonium lanthe

ZONAL PELARGONIUM IANTHE.

WITH AN ILLUSTRATION.

IN the accompanying plate is figured one of the fine new Zonal Pelargoniums raised by Dr. Denny, whose excellent papers on this popular family have been published in our last and present volumes. This variety, named IANTHE, is one of the most refined flowers we have fallen in with, and possesses a delicacy and play of colouring which, though admirably rendered by our artist in his original sketch, will not, we fear, be altogether so satisfactorily reproduced by the colourist.

The habit of the plant is moderately vigorous, the leaves neat, and marked with the characteristic zone, while the flowers are large, well formed, and abundantly produced in bold, conspicuous, nosegay-like trusses. The colour is very difficult to note, a peculiar bluish tint mingling with the crimson. We append the description given in the *Catalogue* of Mr. William Paul, of Waltham Cross, by whom *Ianthe*, with several other fine novelties obtained by Dr. Denny—notably *Wellington* and *Sir Charles Napier*—was sent out. All three of these varieties were certificated at Kensington :—

Ianthe :—Flowers bluish crimson, the blue predominating in the lower petals ; flowers of large size, good shape and substance, quite novel, and very beautiful ; habit very dwarf and branching, with handsome dark green zonal foliage ; colour of flower unaltered by rain or sun. Altogether the finest variety for bedding ever sent out.

Sir Charles Napier :—Flowers fine brilliant dark scarlet, very large, of great substance, and fine form, petals considerably overlapping ; habit first-class for pot-culture. Far in advance of Clipper and Lord Derby.

Wellington :—Flowers dark maroon-crimson, velvety and exceedingly rich, broad and finely-formed petals, trusses of immense size and abundant ; habit vigorous, with large and handsome foliage. The finest hybrid nosegay ever produced ; noble for conservatory decoration.

MYOSOTIS DISSITIFLORA.

I WANT to write a word in praise of this beautiful Forget-me-not, as being remarkably well adapted for pot-culture. I have a quantity of it in small 48-pots—nice bushy little plants, that in a few days will be masses of rich azure-blue flowers. Now that the decoration of the dinner-table is so much followed, I know of nothing so useful for the purpose as this Forget-me-not. The plants were lifted from the open ground in September last, divided, and potted singly ; they remained out-of-doors till established, and were then placed in a cold frame, and the lights kept on only at night, when it rained, or during the prevalence of frost. I have, however, learned by experience that it will be best for the future not to pot up the plants that have bloomed the previous year, but to use seedlings. These I shall prick off on to a warm border in the autumn, and pot them soon after Christmas. I have found some difficulty in wintering old plants in pots, but do not anticipate anything of this kind in regard to seedlings. I have a bed of seedlings that have stood out all the winter, and have scarcely lost one of these plants, though they were very small when put out. Within the last fortnight they have made rapid growth, and should the present

open weather continue, they will soon be in full bloom. All spring-flowering plants are coming on very rapidly this season. A ring of *Crocus susianus* and *C. biflorus*, mixed together, is now in full bloom, and a very pretty sight it is. *Aubrietias* are fast unfolding their flowers.—Quo.

ON CROSS-BREEDING PELARGONIUMS.—No. III.

HAVING given verbatim my method of proceeding in fertilizing and propagating the Pelargonium by seed, the next question that arises is,—What have I gained by my careful notation? I must here remark that it requires the accumulated data of many years, and the results of many observing and accurate workers, to obtain any certain bases from which reliable conclusions can be drawn.

However, the information I have derived from my records, as far as they go, I consider valuable, inasmuch as they indicate a mode of procedure in several respects the exact reverse to my preconceived notions, which were derived from books.

My essay in cross-breeding was made with the sole object to solve for my own satisfaction “the influence of parentage,” and my experience satisfies me that the male or pollen parent has—*provided the two parents are of equal strength*—much the greater influence over the progeny than the mother in all respects, in colour, in form of flower, in habit and constitution of plant, and in the variegates in colour of the foliage also.

I had been taught that the colour of the flower followed the male parent, but that the form of the flower, the habit and constitution of the plant, followed the mother. Bear in mind I state that the preponderance in favour of the father is “provided the two plants are equal in constitution,” *because upon this point it seems to me that much depends*; for were it not for an inequality in vigour, according to my theory, we should have no new varieties, but the offspring would invariably resemble the father. To this is doubtless due the immutability or steadfastness of our annuals, and all flowers where the seed is the result of self-fertilization; the tendency to degeneration that occurs in flowers under these circumstances, is where the flower has been cultivated by artificial means up to a state of perfection beyond its normal character.

To illustrate what I mean as regards the Pelargonium, suppose the pollen of a weakly-constituted plant, which bore a brilliant and novel-coloured flower, but of bad form, applied to the stigma of a robust-constituted plant, which possessed a fine-formed and thick-petaled flower. Much the greater majority of the offspring would resemble in all respects the father, but a few would, perhaps, resemble the father in colour, but at the same time present a somewhat improved form of flower and constitution of plant, showing the influence due to the increased vigour which the mother possessed. Reverse the order of things, and the mother’s influence in that case would be found to be almost *nil*.

Again, where the pollen of a variegate is applied to the stigma of a powerful

green-foliaged sort, more than one-half of the offspring will be more or less variegated, and will also be wanting in vigour, while half will resemble the mother. Reverse the order of things here, and see how few will be found to resemble the mother. The difference in vigour between the variegates and the robust mothers that are employed in breeding for variegates, is greater than between those for flower, consequently the effects upon the offspring are still more apparent.

From this conviction of the influence of the male parent, it will be inferred that in breeding for improvement in size, in combination with form, in the scarlets, I should employ the finest-formed flower as pollen parent upon the largest and thickest-petaled seed parent I could obtain, irrespective of form. The result of crossing two equally fine-formed and fine-quality flowers I find not to be satisfactory; the flowers of their offspring are smaller, and degenerated in quality, the texture of their petals less smooth, and with a tendency to crumple. In fact, the same rule seems to apply to flowers as to animals—that the crossing of opposites more frequently produces the best results. The same analogy seems to exist with regard to what is termed breeding in-and-in; for I find crossing varieties the offspring of the same parents, or the offspring back again upon their parents, or the parents upon their offspring, to be decidedly pernicious, which indicates the necessity for procuring every season plants and varieties distinct from those hitherto employed.

In breeding for improvement in the nosegay class, or for what are termed hybrid nosegays (a misapplied term, for they are not hybrid, the nosegays and zonals being certainly of one species), I apply the pollen of the nosegay upon the stigma of a broad-petaled zonal.

As regards the blending and production of novel colours, much has yet to be done and learnt. My notes indicate that the magenta shades are the result of the mixtures of pink or lilac and scarlets; the magentas and scarlets produce various hues of crimson and maroon, according to the depth of the scarlet; white and scarlet, salmons; and strange to say, salmon will not unfrequently result from the crossing of two scarlets; but the extent of the blend, and the variations that result from the mixture of colours, depend, as I have previously observed, upon the respective constitutions of the plants employed. Probably no blend at all would result if the pollen parent possessed both a decided colour, and the greatest vigour. I find that the production of a brilliant and novel colour is accompanied by a primitive form of petal, which causes the difficulty in obtaining the combination of novel colour and good form. There is one fortunate circumstance, viz., that a bad constitution also generally accompanies the novel colour, as well as the bad form of petal.

As regards the difference in the functions that is stated to exist between the pollen of the long and short stamens, I have not made sufficiently accurate experiments to form a decided opinion. The short seem to me to possess diminished power of fertilization, but this may be merely owing to the fact, that

I have more frequently used them after the long ones had fallen off, and therefore possibly the pollen was stale.

I cannot advise as to the employment of individual varieties for parents. This must depend upon the object, the taste, and judgment of the manipulator; and he must be guided, too, by his own notes as to which he would use a second time, for it will be found that some varieties will produce good results as seed-bearers, and some as pollen parents, while others are good or bad in both capacities.

In breeding for either golden or silver tricolors, I recommend the employment as seed-bearers of the darkest-zoned and most robust-constituted non-variegated varieties obtainable: the foliage should be stout, convex, and circular, with the base colour dark green, and the zone well defined and broad; for pollen parents, varieties distinguished for their brilliancy of colour, and definition of their markings, in conjunction with vigour of constitution, short-jointed habit, circular and convex foliage. It is not desirable to use the pollen of variegates while on their seedling roots, for under these circumstances they possess but very weak powers of transmission of colour to their progeny. The power of transmission of colour is greatly increased when the variegates have been established on their own roots.

I have obtained some pleasing golden tricolor varieties by using the gold bronze zonals as seed-bearers, but I find by employing them there is less chance of the seedlings possessing the requisite vigour to make satisfactory varieties after propagation, than by the adoption of the robust green zonal.

Amongst the seedlings raised between the golden tricolors and the green zonals, I have invariably had some come gold and bronze bicolors; but to breed for bicolors I should employ a dark green zonal as seed-bearer, and the bicolors as pollen parent.

I have used the term hybridization in my former papers, but correctly speaking all that I have hitherto treated of *amounts only to artificial fertilization*. I would mention that I have failed to obtain a cross (although I have tried hundreds of times) between the tricolors and ordinary zonal varieties, and the class to which *Surpasse Beauté de Suresnes*, an old variety named the Duke of Cornwall, and most of the Doubles belong; these will all cross freely with one another, but absolutely refuse even so aristocratic an alliance as to accept of Lord Derby as a husband—why, I cannot conceive: for they appear in every respect to belong to the same species.

Lastly, touching a matter of very considerable importance to the amateur with a limited amount of house-room, viz., the proportion of really good varieties (*I mean varieties possessing novel properties, and qualities considerably in advance of those we have*) obtainable in a given number of seedlings—upon this point I fear I cannot hold out a very brilliant prospect. In fact the proportion is small, and may be said, after all, to resolve itself into a matter of selection; for using as I do nothing but the very best and finest varieties in cultivation as parents, a very considerable amount of thought and judgment,

aided by careful notation and observation, saving no seed but that which I am almost certain has been the result of *artificial* fertilization, I am satisfied if I obtain (in the flowering section) an average of one good variety out of four hundred seedlings, and five or six fair varieties an advance upon their parents; and in the tricolor section the proportion is much less, more like one in a thousand; this is what would be expected from the disadvantage the pollen parent labours under.

Having remarked upon the smallness of the proportion of really good and novel varieties obtainable from a given number of seedlings, making it appear to be somewhat a matter of selection after all one's pains and trouble, I am (for *the encouragement of careful artificial fertilization*) bound to give the other side of the picture for comparison, by showing the result of seedlings produced *without* the aid of thought and judgment. I saw last summer a bed containing several thousand seedlings in flower; the seed from which they were raised had been saved from the best varieties, but it was the result of *self* or *insect fertilization*, and the whole bed did not contain one single plant worth selecting. I would, moreover, conclude by quoting a passage from Darwin's book, *On the Origin of Species*:—"One new variety raised by man will be a more important and interesting subject for study, than one more species added to the infinitude of already recorded species."—JOHN DENNY, *Stoke Newington*.

CULTURE OF NEPENTHES.

EXCEPTING it be owing to the fact that the species of *Nepenthes* are somewhat expensive to buy, and require besides a comparatively high temperature to grow them successfully, it would be difficult to explain why so interesting and beautiful a group of plants is not more generally cultivated. The more striking species, moreover, while young, furnish some of the most elegant of basket-plants, for when grown in that way the pendent pitchers have an exceedingly graceful appearance. The interest attaching to the first known species, *N. distillatoria*, has been subsequently extended by the acquisition of *N. ampullacea*, *N. Rafflesiana*, *N. Hookeriana*, *N. phyllamphora*, *N. laevis*, &c., and later still by that of *N. villosa* and *N. sanguinea*; besides which some very useful hybrids have been obtained at that genial place for exotic crosses, the Messrs. Veitch's nurseries at Chelsea. Of one of these fine hybrids, *N. Sedeni*, a figure is appended. Other still finer species than the above-named, as *N. Lowii*, *N. Rajah*, *N. Edwardsiana*, &c., remain to be introduced.

Our older tutor scribes gravely inform us that the *Nepenthes* can only be grown successfully with the roots plunged in bottom-heat, but this I have, from personal experience, proved to be unnecessary to a possible and less costly system of culture; for I have grown them with the base of the pot containing their roots, placed upon inverted pots, just so that the water in an ordinary cool tank touched their base, and so afforded intermittently a supply of moisture. This, however, was allowed during the summer or growing season only, the pots being elevated

somewhat during the winter months, and a sufficient supply of water afforded by the use of the watering-pot, and superficial syringings.



NEPENTHES SEDENI.

The usual mode of propagating the *Nepenthes* is by means of cuttings—the young side shoots or suckers which push from around the base of the plants; these require placing under bell-glasses, with bottom-heat. Moreover, thrifty young cuttings, having, however, the wood tolerably well matured at the base, should be pro-

cured, since they are very tardy in striking root, except all possible appliances are at hand. Perhaps one of the greatest mistakes which a novice in the art of propagation is apt to make, is to disturb the cuttings occasionally in order to ascertain if any symptoms of young roots exist at their base; this, to say the least, is calculated to destroy a favourable condition as regards their production. Some of the larger-leaved varieties are rather shy of producing side shoots, or suckers, and are therefore difficult to propagate. In such instances, and when the plants may have become too stalky, a cleft may be made at the base of the first leaf of any season's growth, which has been fully matured, and around this sphagnum may be tightly bound and kept constantly moistened; in this way roots will sometimes form, though at other times, after two years' attention to damping the moss, no roots will have been obtained. Fortunately cuttings are produced more plentifully on some of the best of the more recently introduced species, the habit of these latter being better than that of the earlier spare-stalked varieties.

In potting established plants, great care must be used not to injure the small rambling, dark, wiry roots. The pots must be liberally and carefully crocked. The plants delight to grow in a compost consisting of two parts sphagnum and one part fibrous peat, or what perhaps I should term fibre of peat, as the more earthy matters should be thoroughly removed. Pot moderately firmly, and subsequently give a good watering at the root, and a deluging overhead at the same time. The plants must then be shaded, and kept close in a nice moist atmosphere for a week or two. The average maximum temperature necessary in the height of summer, and that with an abundant supply of humidity, is from 88° to 93° , which should be reached gradually from that of early spring. In mid-winter a mean temperature of from 63° to 66° will suffice, with, of course, less humidity and surface syringings; though it should be borne in mind that a moderate supply of water at the roots will always be absolutely necessary for the well-being of the plants.—WILLIAM EARLEY, *Valentines*.

KITCHEN GARDENING FOR MARCH.

THIS is a very important month with gardeners. So many things have to be thought about, that it is almost impossible to keep pace with the season even when the weather is favourable. After the long continuance of wet weather we have had, I fear stiff heavy soils will not be in a very good state for the reception of seeds at the beginning of the month. I advise early sowing when the soil is in a proper state, and the weather is favourable, but not otherwise. The after success depends in no small measure on the seed being got in under favourable conditions, therefore sowing should never be attempted when the ground is wet, but no favourable opportunity of getting in the crops should be lost. All crops should be sown in drills; this mode of culture increases their size, and facilitates the after labour of thinning and hoeing. The main crop of *Onions* should be got in as early as possible; choose for it a piece of ground already in good condition, instead of digging in a quantity of fresh manure just

previous to sowing the seed; Onions generally do well on land that has been previously occupied with Celery; make the ground firm either by treading or with a wooden roller, and sow in shallow drills about a foot apart. Sow *Parsnips* about the middle of the month, in drills about 14 in. apart, for the main crop, in deeply dug or trenched ground. Sow some *Early Horn Carrots* at the beginning of the month, in drills about 8 in. apart, for use before the main crop is ready; and towards the end of the month the main crop of other *Carrots* in drills about 14 in. apart, in deeply dug or trenched ground. Sow a few *Leeks* in a small bed, for transplanting afterwards into well prepared trenches. Sow *Celery* for the main crop, and prick out on a gentle heat that sown last month. Sow a good breadth of *Parsley*; also some *Early Turnips* on a warm border, and *Spinach*, *Lettuces*, and *Radishes*. Sow *Brussels Sprouts*, *Broccolis*, *Borecoles*, *Savoys*, *Cabbages*, and *Cauliflowers*; and towards the end of the month sow some *Beet*, *Salsafy*, and *Scorzonera*. Make two sowings of *Peas* during the month, the first of middle and late kinds, and the last of late varieties; also two sowings of *Broad Beans*. Sow *Mustard* and *Cress* in heat, also *Sweet Basil*, *Marjoram*, *Capsicums*, *Tomatos*, *Thyme*, &c. Sow *Melons* and *Cucumbers*. Plant out *Cabbages* from August-sown beds; also *Cauliflowers* out of frames. Cauliflower plants that were potted in the autumn and have had one or two shifts since, will now be fine plants, and if planted at the foot of a south wall, or other warm situation, will come into use in the beginning of June, just when late *Broccolis* are done. Plant *Lettuces* that have stood the winter. Get in all the early kinds of *Potatos* at the beginning of the month, and proceed with the planting of the late crops towards the end of the month. Dress and dig over beds of *Herbs*, and make fresh plantations. Clean and dig borders. When the soil is dry, stir the surface well between all crops.—M. SAUL, *Stourton*.

THE SNOW APPLE OF CANADA.

WHAT a delightful little apple is the *Pomme de Neige*, and yet how very seldom do we see it! It is a very old acquaintance of mine. I knew it, and loved it for its intense beauty and its excellent qualities, long before I learned its correct name. It is an apple that succeeds well in northern situations. I have seen it in admirable condition on Deeside, Aberdeen, and it is stated in the *Transactions of the Horticultural Society*, by Sir George Steuart Mackenzie, to succeed well in Ross-shire. The fruit is rather above medium size, ovate-conical, very regularly formed, the eye closed, the stalk nearly an inch long, the skin greenish-white on the shaded side, brilliant scarlet, or streaked with brilliant scarlet on the sunny side, at all times exceedingly beautiful. The flesh is pure white—white as snow, peculiarly tender, juicy, melting, and pleasantly flavoured. In season from October to Christmas.

This is in every respect a most interesting apple, and altogether distinct from the ordinary class. The brilliant scarlet skin, in contrast with the pure white flesh, renders it strikingly beautiful; and the texture of the flesh is of that peculiarly tender character which many of the American apples possess, such as

we find in the Melon, Northern Spy, and partly in the French Calville 'Blanche, —firm, yet short, and melting in the mouth, like Scotch short-bread.

The Snow Apple was, I believe, introduced from Canada by Mr. Barclay, of Brompton, under the name of *La Fameuse*, which is given as a synonym in the *Fruit Catalogue of the Horticultural Society*. I have not been able to distinguish it from another apple named Pomme Lücken, in the collection of the Horticultural Society, but I cannot answer for the Pomme Lücken being correct. The name Pomme de Neige signifies the Snow Apple, being significant of the whiteness of its flesh; this is not, however, the source whence it was derived, but from the name of a village where it is much cultivated (see *Horticultural Society's Transactions*, vii., p. 334). I would strongly recommend the re-establishment of this truly beautiful, very interesting, and altogether excellent apple to our gardens.—A. F. BARRON.

THE POLYANTHUS.

THE taste for this much-neglected old favourite spring flower appears to be reviving in some localities, but I fear that many of the old sterling varieties are entirely lost, while many of the new ones are deficient in the points requisite to constitute a good flower. It is remarkable that so few good ones should have been raised of late years, and many parties have given up the raising from seed in consequence. It may be owing to a want of artificial impregnation. There are, however, some of the old, ardent, persevering florists that appear to be determined to try again what can be done towards reviving this favourite of their early days. The greatest difficulty appears to be to keep the plants alive when raised. Even the common hardy sorts cannot be kept long in this locality, and the choicer varieties, whether grown during the winter and spring in frames or otherwise, baffle the most experienced.

Some of the old cultivators of this lovely spring visitant used to grow them luxuriantly in 5-in. pots, placed in square holes cut in an elevated ridge of grass turfs, facing the south, and protected from the weather by a water-tight board only, raised in the day, and let down at night; and in these primitive frames, in its season, the Polyanthus might be found in perfection, all that the most fastidious could wish for, and such as was considered worth walking a dozen miles to see. Alas! such sights seldom greet one's eyes now-a-days. Whether, as some of the old veterans have given as their opinion, it was chiefly owing to the noxious vapours from chemical works, and gas in the air, that failure came, I am doubtful, for in localities miles away from any of these blighting influences the result is the same. They appear to flourish best in a moderately stiff loamy soil, mixed with old cow-dung and coarse sand, giving them plenty of drainage, and allowing them a shady situation, shaded and sheltered at least, either naturally or artificially, from the extreme heat of summer, and against the biting north winds of winter. Those who feel inclined to grow this beautiful spring flower would do well to study the natural habitat of our common primrose. Where this flourishes year

after year, it will generally be found to be protected during the summer by overhanging branches, or hidden by more robust herbaceous plants, so that the plants are seldom seen during the summer season.

If the following varieties can be procured by those who wish to try their hand at raising seedlings, they may depend upon having a more satisfactory return for their labour than from purchased seed. I have no doubt that most of these sorts may be obtained from that veteran florist, Mr. John Spencer, Lenton, Nottingham :—

<i>Buck's George IV.</i> —Large and hardy.	<i>Sanders' Cheshire Favourite.</i> —Fine.
<i>Hufton's Lord Rancliffe.</i> —Dark, rather small.	<i>Pearson's Alexander.</i> —Dark, fine.
<i>Hufton's Lord Lincoln.</i> —First-rate.	<i>Cranshaw's Exile.</i> —Dark, fine.
	<i>Bullock's Lancer.</i> —Fine, red.

The seed may be sown at the latter end of February, or early in March, in pans or boxes, in a frame or greenhouse, or under a hand-glass. The young plants should be transplanted, as early as size will permit, into nicely prepared soil, and protected from the sun by some means. They may be planted out in August at about six inches apart, and if well managed they will bloom profusely the following spring. All inferior varieties should be at once discarded, and the best divided at the latter end of July or early in August, giving them new soil. I shall be glad to hear of the success of any one in cultivating this lovely spring-flowering gem, and trust we shall see many new faces within a few years ; though some persons admit that the new *Primula japonica*, in the hands of Mr. Bull, of Chelsea, bids fair to rival the old favourite of our early days.—JOHN WALKER, Winton, Manchester.

PINK BEDDING PELARGONIUMS.

PERHAPS no colour is more necessary in the flower garden, to tone down the blaze of scarlets, than that of the old well-known variety named *Christine*. Indeed, since the introduction of the *Lucia Rosea* and *Christine*, these beautiful peach-blossom shades of pink have become indispensable in floral decorations. Many new varieties have been raised, grown for a time, and then discarded, since those just mentioned made their appearance ; and during the last season two very promising ones, which are sure to be extensively used both for bedding and pot-culture, have been sent out.

MASTER CHRISTINE is unquestionably an acquisition. The accompanying engraving of it is from a photograph of a plant that carried off the highest floral honours ; and it was, moreover, the only Zonal Pelargonium awarded a certificate by the Floral Committee of the Royal Horticultural Society in 1870. The plant is of very dwarf habit, and a most abundant bloomer ; the colour a very bright pink, with a small white eye ; the pips are small, of thick substance, producing medium-sized globular trusses on strong foot-stalks, qualities which must render it particularly valuable for bedding purposes. Up to the present time the stock has been very limited, consequently no plants have as yet been bedded out, but there is every probability that it is all that can be desired.

Mrs. UPTON.—This variety is in most respects similar to the foregoing, but is much paler in colour, and produces much smaller trusses; it is, however,



PELARGONIUM MASTER CHRISTINE.

a very free-blooming sort, and should it prove to bed well, it will be found to be a fine addition in this class.

MAGENTA CHRISTINE.—This is a very brightly-coloured and dwarf free-blooming variety ; it must have good deep rich soil, otherwise it exhausts itself by the excessive production of flowers, and becomes shabby in appearance, but if well attended to, it is a charming variety for small beds.

ADVANCER.—This is similar to the last, but of stronger growth, producing an abundance of trusses of small blossoms ; it is almost a self-colour, the hue being very dense and bright.

BLUE BELL.—This belongs to the pink class, and is a good showy variety for large beds, and back rows. In the fall of the evening a blue-purple shade is decidedly visible in its flowers, which gives it a distinct appearance. Its growth being rather tall, it requires to be plunged in pots when put into good soil.

DANTE.—This is also a strong grower, but its colour is distinct from that of the above, having more of a salmon tint mingled with the purple-pink, which is soft, bright, and attractive. When bedded out in moderately rich soil, it has a charming effect.—H. CANNELL, *Woolwich*.

ON TURFING LAWNS.

TURFING, or the laying of turf, or spine, as it is in some places called—an operation of some importance in making new gardens, or altering old ones—consists in covering with turf the portion intended for grass, instead of sowing seeds. It is a good practical plan of proceeding, particularly if fine grass-turf, free from daisies and other coarse weeds, can be obtained at a reasonable rate near the locality. Of course there is considerable expense and much heavy labour attending the cutting, carting, and conveying of turf to the spot where it is to be used ; also in laying, beating, rolling, &c., but then when done, it is there, green and fresh, like an old-established place at once. On the other hand, one might have to wait a considerable time to obtain a good, regular, and thick bottom of fine grass from seeds ; and however careful one might have been in the choosing and sowing of suitable kinds of grass, some spots are pretty sure to grow coarse and uneven, some obnoxious weeds to make their appearance ; and these, of course, have to be eradicated, all of which adds to the expense. Mowing must not, moreover, be set about very early on newly-sown grass, however uneven its growth may appear, on account of its liability to suffer injury before it is well established ; while new turf, laid neatly, and kept well rolled, takes hold of the soil and grows away at once, and mowing can be set about as soon as growth has begun, as safely as on an old lawn.

There is another kind of intermediate way of obtaining quickly a fine and lasting turf bottom, of which I have had in my time a great deal done, both in works on a large and on a small scale, but more particularly in laying down large lawns and broad areas of park-like land, where the immediate effect of a good bottom of fine grass has been required. It is done thus :—first level the land, leaving a loose, healthy surface ; then cut or pull the turf into four-inch pieces, and drop these over the surface at a foot apart—a turf 3 ft. by 1 ft. will cut

into at least 27 pieces; then sow over the surface, previous to beating or rolling, a little fine grass seed, and Dutch clover, and it is astonishing how quickly a thick fine bottom of grass will be obtained.—JAMES BARNES, *Exmouth*.

WINTER CUCUMBER-GROWING.

FORWARD you, in a tabulated form, a note of the quantity of Cucumbers cut between the 16th of October, 1871, and the 29th of January, 1872. Our pit, where they are growing, is 27 ft. long by 6½ ft. in breadth. It was planted on the 6th of September, with eighteen plants raised from cuttings, of the following varieties :—9 Telegraph, 1 A B C, and 8 Major Clarke’s Seedling. The bed is heated with three 4-in. pipes for bottom-heat, and three rows of 3-in. pipe for top-heat. Over the former set of pipes are placed 1 ft. of rubble and the soil, which latter is composed of turfy loam mixed with half-rotten leaves, and forms a bed about 15 in. in depth.

October	16	17	18	20	21	23	25	27	28	31	
Number of Fruit Cut.	6	10	8	11	3	17	24	11	8	9 Cut in Oct....107
November	1	4	6	8	11	16	18	20	22	27	30
Number of Fruit Cut.	10	6	10	4	5	6	9	10	8	6	3 Cut in Nov.... 77
December	3	9	11	12	14	18	23	26	28		
Number of Fruit Cut.	6	5	1	3	6	5	6	1	3 Cut in Dec.... 36	
January	2	6	10	14	17	20	23	25	29		
Number of Fruit Cut.	4	4	2	3	7	5	6	1	2 Cut in Jan.... 34	
											Total..... 254

I may add that there have been nine fruits cut in February, and four are now hanging (Feb. 9). The plants are still showing lots of fruit, and look well. The length has averaged about 15 in., but many of them have measured 18 in. By feeding I have no hesitation in saying that they would bear all the summer, but having plenty of dung pits, I shall take them out in March, to make way for Melons.—R. GILBERT, *Burghley*.

NOVELTIES, Etc., AT FLOWER SHOWS.

R. WILLIAM PAUL did well to offer prizes for his new *Waltham White Primula sinensis* at the meeting of the Royal Horticultural Society on February 14th. It is one of the most distinct varieties of this popular spring-flowering plant that has been seen of late; the flowers are pure white, and borne well above the foliage; the habit is good; the leaf and flower-stalks red. Some very fair plants were staged, and the more I see of the *Waltham White Primula*, the more am I impressed by its thoroughly distinctive character. Mr. Tomkins had some plants of his new varieties, *Princess Louise*, with the flowers white, flushed with lilac, large, smooth, and very striking; and *Marquis of Lorne*, which is a deep magenta-crimson, large and fine. *Primulas* and *Cyclamens* made quite an attractive display, and though there was nothing in the latter calling for special notice, they were yet a charming feature at this meeting. *Thujopsis borealis aureo-variegata* (F.C.C.) was shown by Mr. Noble, of Bagshot, and is certainly very promising, and should its marking prove permanent in character, as Mr. Noble thinks it will, and as the plants from the open ground

seemed to indicate, it will prove a good acquisition to our golden-tinted evergreen plants. A magnificent example of *Hippeastrum pardinum*, shown by Messrs. Veitch and Sons, was worth going a long way to see; it had seventeen fully-expanded handsomely-marked flowers, and received, as it deserved, much admiration. A grand example of *Lælia anceps*, which had over sixty flowers, and formed a fine feature, was shown by Mr. Denning, gardener to Lord Londesborough. A group of hybrid *Solanums*, shown by Mr. B. S. Williams, could not fail to challenge attention, and one wonders they are not much more extensively grown for house decoration at the dead season of the year. There is a marked contrast between their coral-red berries and the deep-green foliage. Two highly-coloured *Cinerarias*, named respectively *Lord Kilmorey* and *Lady Kilmorey*, were shown by Messrs. Standish and Co., of Ascot, who have a very fine strain of this popular spring-flowering plant. Not the least attractive feature was a basket of spring-flowering plants, grown under glass, exhibited by Mr. T. S. Ware, Hale Farm Nurseries, Tottenham. Such things as double *Primroses*, *Hepaticas*, *Lily of the Valley*, *Scillas*, &c., some deeply coloured, others of delicate tints, were very charmingly grouped together, and drew about them admiring groups.—R. D.

RONDELETIA SPECIOSA.

THIS very pretty and useful stove plant may, by a little attention to stopping, be had in bloom at any time in the year. To grow it well it should have good fibry peat broken up, with just a dash of good yellow loam well pulverized between the hands, and a liberal quantity of sharp silver sand; let these be well mixed together, and supposing a plant has been partially rested previously, let it be started into growth in the early part of February, in a temperature ranging from 60° to 70°, syringing on bright mornings and evenings. By the first or second week in March it will be sufficiently forward to receive a shift, which should be just large enough to allow of the operation of potting being properly performed. Large shifts must, as a rule, be avoided in the cultivation of hard-wooded plants. One-fourth of the depth of the pot should be filled with crocks for drainage, and this should be covered with fibry peat to keep the sand from choking the drainage. The plant should be potted firmly, and its watering well attended to, never allowing the roots to suffer from want of water, as from their fine, hair-like character, they are soon destroyed if allowed to become dry. When the plant gets into free growth, stop the young shoots at every second pair of leaves, until within twelve or thirteen weeks of the time when the plants are required to be in bloom, when stopping must be discontinued. If blooming is over by the end of July, remove the dead flower-stems and encourage the plant to grow; and a second crop of pretty orange-red flowers will, in the following winter, reward the cultivator for his trouble; these flowers are very useful for cutting for bouquets. When the second bloom is over, give the plant a short rest, and proceed as above directed for the following season.—HENRY CHILMAN, *Somerley Gardens*.



DRACÆNA REGINA.

ONE of the most distinct and beautiful of the many coloured-leaved species of this family which now decorate our plant houses, is this *D. regina*, of which, thanks to Messrs. Veitch, its introducers, we here give a figure. The plant is of bold erect habit, having broad oblong leaves, arranged in a spiral manner, and when fully developed as much as six inches in breadth;

these when the plant is established have a broad creamy-white margin (well represented in the figure), which is more or less broken on the inner side where it joins the green portion of the leaf. This blending of green and white is remarkably effective, not only in itself, but on account of the contrast it presents to the red-leaved kinds. *D. regina* is one of those sterling plants which cannot fail to please. It is from the South Sea Islands, and was introduced by Mr. John G. Veitch.—T. M.

THE NEW GRENADA CATTLEYAS FUGACIOUS.

NOW that we have had some experience in the cultivation of this interesting division of *Cattleyas*, I find that they are not so valuable, from a persistent-flowering point of view, as other divisions flowering at different periods of the season. As to beauty and variety of colour they have no equals, but when one finds them so short-lived it considerably lowers their merit. Whether it be owing to our short days—very short in comparison to what the plants must enjoy of light in a native habitat at this particular time, or whether it be their nature, I am not in a position to pronounce upon. Probably both these causes may affect them. Certain it is that the quality of the sepaline and petaline segments, and even of the labellum, which stands longest generally, is not such as to keep our eyes feasting upon their beauteous colours for any length of time. They expand with coyness, and after they are expanded, unless the atmosphere be of the nicest balanced kind as to mildness and moisture, they crumple up like a piece of silk paper. They want consistency to keep their segments fully expanded, and mayhap the flower you are admiring to-day, on the first day of its expansion, may be less beautiful to-morrow. I was a little surprised at the time, that Mr. Bateman could not command a worthy collection to compete for his £10 prize last season, but my surprise gets somewhat subdued as I myself prove the shyness of this division to show us their flowers with any degree of regularity like other *Cattleyas*—I don't know a single exception; and when we do see them they pass away from us like the inflorescence of a *Stanhopea*, before we can, as it were, call our friends together to see them.

I find at best that the flowers won't stand over fourteen days, and where they do so they must be face to face with their glass horizon. I also find that small plants, that is flowering plants, with from one to four spathes, give a better return than larger ones. I find, moreover, that to flower them to what might be called perfection, so far as we have been able to see, the pots or baskets in which they are growing must be crammed full of roots in the interior, and over the exterior. We have never had them better, nor so good, since the days they were in that condition; and I am just thinking that possibly Mr. Marshall, who exhibited them so grandly at the Royal Horticultural Society, may have experienced since somewhat the same peculiarity in flower development and flower persistency. Probably he may tell you in the pages of the FLORIST AND POMOLOGIST. I may state that we have hundreds of them in the best condition

as to health, some few of course not so good as others, and that seems to be the bent of the plant's inclination. Moreover, I can see that unless the bulbs are thoroughly well ripened during the growing season, hardened, as it were, out of shade in autumn and wintered in a mild moist medium, there will be more failures than successes in the crop of flowers from December to February and March.—J. ANDERSON, *Meadow Bank*.

THE COLEUS FOR CONSERVATORY DECORATION.

SOME specimen plants of *Coleus* standing in the conservatory here, last summer, were the objects of general admiration. The plants alluded to were grown into pyramids, from $5\frac{1}{2}$ ft. to 6 ft. in height, and from $4\frac{1}{2}$ ft. to 5 ft. through their base. There were several varieties, but those most admired were *Queen Victoria*, *Her Majesty*, *Albert Victor*, and one grafted with two other varieties, thus forming three distinct bands each about 18 in. deep, the base (stock) being *Prince of Wales*, the middle *Queen Victoria*, and the top *Princess of Wales*. We have also formed standards by taking off the side branches of any strong-growing sort, and grafting on it six or eight different varieties; and very pretty objects they make, either for the conservatory or dinner-table decoration, though for the latter purpose I think a less number, three or four varieties as distinct as possible, is preferable. At present we have a head made up with *Queen Victoria*, *Scottii*, and *Prince Arthur*; the contrast is great, and the effect good. The small-growing variety *Telfordii* (*aurea*) can easily be grown into good-sized heads in this way, or if grafted so as to form the centre of a head (being a slow grower, it should be kept well up), and surrounded by darker varieties, it will have a very pretty effect.

The *Coleus* enjoys a high range of temperature, and an abundance of light and air are necessary to bring out its brightest colours. It should be well supplied with water at the root and kept in a humid atmosphere, but it is impatient of the syringe. Under these conditions it will make rapid growth. The pyramids already mentioned were raised from cuttings in the preceding autumn, and kept growing through the winter in a cucumber-house at work. The leading shoot was kept ahead of the side branches and the latter frequently stopped to induce a pyramidal form, and also to secure a compact growth with the greatest possible number of points, for the greater the number of points which the plants possess (provided they do not crowd each other) the better; and it is in the early stages, when the wood is young and breaks freely, that we must lay the foundation of a well-furnished plant. Some varieties have a great tendency to flower, especially if at all pot-bound; they should therefore have liberal shifts as often as they require, and have the flowering points removed. Should the leading shoot show flower, and it is intended to grow pyramids, I find it the best plan to take off two or three pairs of leaves with the flowers, as the break will be stronger, and will soon more than compensate for the seemingly unnecessary shortening. The reason of this is obvious: by cutting back to where the wood is strong, we

get a strong break, but by removing the flowers only and leaving the last pair of leaves attached to the weak stem, we get a still weaker break, only to show flowers again before making half the required growth. The plants becoming too large for their place by April, they were removed to the stove, where they remained until after the middle of June, when they were taken to the conservatory, where they did duty till the beginning of November. They will grow in almost any soil, but a compost consisting of two parts loam, one part peat, and one part rotten dung, with a free admixture of silver-sand, seems to suit them well.—THOMAS WINKWORTH, *Holkham Gardens*.

FLOWER-GARDEN MANAGEMENT.—MARCH.

ADVANTAGE should be taken of fine weather to forward all out-door operations. The digging and raking of borders, planting of trees and shrubs, making of walks, laying of turf (see p. 60), and all other descriptions of work should be carried on vigorously, and finished as soon as possible. When digging the borders of *Herbaceous plants*, all overgrown specimens should be lifted, divided, and replanted. Beds and borders containing *Hardy Bulbs* should be dressed as soon as these make their appearance above ground; if done before, there is danger of injuring them. *Tulips* and *Hyacinths* must be protected in bad weather. Plant last year's layers of *Carnations* in beds to flower, and put some also into larger pots to bloom. Plant out *Hollyhocks*, also seedling *Pansies*, and roots of *Gladioli*. Clean and dress *Pinks* and *Pansies*. Finish planting and pruning *Roses*. Sow hardy *Annuals* towards the end of the month. Sweep and roll lawns three or four times during the month, whilst they are moist, they will then be ready for the mowing machine next month. Clean and roll walks.

IN-DOORS.—All large specimen *Hard-wooded plants* that are advancing into bloom will require to be well attended to in watering; give air freely in mild weather, but carefully guard against cold draughts. Proceed with the potting of the young stock, but avoid over-potting; see that the pots are clean and well drained, and that the fresh soil between the ball of earth and the sides of the pot is pressed in firmly. Keep all newly potted plants rather close until they begin to make fresh roots into the new soil, when air may be given more freely. Great care should be taken in watering not to give them too much; they should be allowed to stand for a few days after potting, before they are watered at all, and then it should be done thoroughly. With the increasing heat of the sun *Soft-wooded plants* will now begin to grow freely. Shift *Calceolarias* into their flowering pots; water carefully and give air freely; give air freely to *Cinerarias*, to prevent mildew, and fumigate occasionally, as they are very subject to the green-fly. Pot off *Fuchsia* cuttings when rooted, and keep them in a nice growing heat. Old plants of *Fuchsias* now growing should be taken out of their pots, have all the old loose soil removed, and be potted in smaller pots; they should then be put into a gentle heat to start them afresh, and will soon begin to make fresh roots and be fit to shift into larger pots. Give plants in frames and pits air freely in fine weather.

Proceed with potting off, and put in cuttings of everything likely to be wanted for summer decoration. Sow some of the best tender annuals, as *Balsams*, *Cockscombs*, *Globe Amaranths*, &c.—M. SAUL, *Stourton*.



PICTURES OF PALM TREES.

CALAMUS IMPERATRICE MARIE.

IN the genus *Calamus* we have one of the most graceful groups of pinnate-leaved palms. They are of slender habit, and hence, while young, are remarkably effective for the decoration of the plant-stove, the drawing-room, or the dinner-table. That of which we give an illustration, from M.

Alphand's *Les Promenades de Paris*—a magnificent book, which we hope shortly to notice more fully—is a somewhat novel species, and as will be seen by the accompanying figure, is of slender, erect habit, with long, drooping, slender pinnate leaves, having the stalks spiny, and bearing closely-set long linear leaflets, the spine-bearing rachis being lengthened out at the apex into a whip-like tail, which is also spiny. This beautiful species is a native of the Philippine Islands. To keep them in a healthy state, the plants should be potted in a compost of good loam and leaf-mould, in about equal parts, the pots being well drained, since a copious supply of water is necessary to them in the season of active growth.—T. M.

FRUIT CULTURE.—MARCH.

THE planting of *Fruit Trees* may still be proceeded with till the end of the month, though it should not, if avoidable, be deferred so late in the season. Standards and other tall trees lately planted should be properly secured to stakes, to prevent their being blown about with the wind. If not already done, give all newly planted trees a good mulching of rotten dung. Continue the pruning and nailing of *Wall Trees* at every favourable opportunity, and endeavour to bring it to a close as early as possible, as the buds are in a very forward state, owing to the long continuance of open mild weather. Preparations for protecting the trees when in blossom should be made at once. Next to glass, perhaps the best and most effective protection is afforded by a wooden coping, with stout canvas so attached that the trees can be covered or uncovered at pleasure. Whatever description of protecting material is used, it should be so arranged that it can be easily put on or off the trees. In mild weather the trees should be fully exposed, but in sharp frosty weather and during storms of snow, hail, or sleet, they should be kept covered during the day as well as night. Finish pruning *Gooseberries*, *Currants*, and *Filberts*. *Raspberries* are best grown in rows 4 ft. to 5 ft. apart, and trained to wires; see that the canes are properly tied to the wires. *Fruit trees* of all kinds may now be grafted. Bullfinches are very destructive to the buds of Plums and Gooseberries at this season.

IN-DOORS.—The principal summer crop of *Pines* will now be in bloom or “showing” fruit, and should have a dry atmosphere, with a temperature of from 65° to 70° at night, and 80° to 85° during the day, with an increase of 12° or 15° by sun-heat. Keep the plants well watered at the roots, and give air freely when the weather permits. The plants for autumn fruiting should now be shifted into their fruiting-pots, and the bottom-heat should be renewed before they are plunged, if it requires it. Take advantage of fine weather to shift the whole of the succession stock; avoid over-potting; the smaller the shift at this season the better; later on, when the plants have made fine, strong, healthy roots, more liberal shifts may be given with advantage. *Pines* do well in a variety of soils; turfy loam, with a little rotten dung, or peat earth, answers well; see they have a bottom-heat of 85°, and in plunging, give them

plenty of room—that they may grow stiff. Keep the pits rather close until the plants have rooted into the fresh soil, when air should be given freely. As the first house of *Grapes* will now have been thinned, they will merely require attention in watering, stopping, firing, air-giving, &c. Maintain a moderately moist atmosphere, and a temperature of about 65° at night. Attend to succession houses. Muscats should have a night temperature of 70°; give air freely in fine weather, but always close up early in the afternoon. Start succession house. All late vines should be pruned at once, if not already done. Maintain a moist atmosphere in the early *Peach house*; a night temperature of 60° will be sufficient until after stoning. Keep the shoots well tied in, and remove those not wanted; give abundance of air when the weather permits; water inside borders, attend to succession house in bloom, and carry out previous instructions. Keep *Figs.* well watered; maintain a moist atmosphere, and give air freely. For *Strawberries* see previous instructions.—M. SAUL, *Stourton*.

AQUATICS.—CHAPTER VII.

THE *Nuphar lutea*, or Yellow Water Lily, is much more robust than the white, albeit not the most vigorous of the yellow sorts. The general aspect of the plant when out of flower is very similar to that of the white. The leaves are usually about ten inches long by eight inches across, very smooth, glossy, somewhat coriaceous, and sufficiently strong for the smaller water-fowl to walk upon them. The thong-like petioles are somewhat angular, particularly so on one side, through their entire length—in this respect, unlike those of the *Nymphæa alba*, which are uniformly round; to mention this fact may appear trifling to some, but when plants are sought for, for transplanting in winter, before the leaves reach the surface, it is useful to know this in order to distinguish them.

The flowers of our plant are of a deep yellow colour, somewhat globular in form, generally about 2 in. across, and not expanded, the petals curving inwards; they are slightly scented, and stand 2 in. or 3 in. out of the water, differing in this respect from the White Water Lily, whose flowers sit upon the surface. It forms a nice contrast with the white, but is most suitable for ponds, lakes, or meres, of considerable size; for if planted in a small pond, and left for a time undisturbed, it will soon monopolize the whole space, and the leaves in summer time will cover the entire surface. Those who will introduce it where the space is limited must take the precaution to pull out a portion every winter with a strong iron hook; it may be thus kept within reasonable bounds. Being a native of Britain, no weather affects it; and it may be met with in most parts of the country in brooks and rivers.

The *Nuphar lutea pumila* (or *minima* of some authors) is a much smaller form of the above, both as regards foliage, rhizome, and flower, the latter of a dull yellow, and not more than half the size of the species. The leaves are of flimsy texture, and for the most part submerged. It is not very commonly met with in

its wild state; I never could meet with it in its native haunts, and failed to find it during the past summer in the river Evenlode, which flows through many a flowery mead in Gloucestershire; though it was a likely locality, and was carefully scanned, none could be found, but scores of crayfish instead. Neither did the larger Windrush, near Witney, furnish any. I have received it occasionally from Shropshire, and also from Rutlandshire, and it is reported from Cumberland and some parts of Scotland. After all, it is not a very desirable form to plant, except for those who are fond of variety; and probably the wisest course would be to leave it undisturbed in its native habitats.

I do not say that our modern Botanists would do wisely if they wrote our Floras on the system of Dalechamp, who penned his *Historia Lugdunensis* in 1587, and classified his plants according to the places in which he found them growing, but such a "system" might assist us in finding some of the plants.—W. BUCKLEY, *Tooting*.

NEW PEACHES AND NECTARINES.

ON reading the practical remarks of Mr. Clark at page 42, I was pleased to find that his experience, in some instances at least, agrees with my own, though in other cases it does not. The very early Peaches raised by Mr. Rivers, such as *Princess Beatrice* and *Early Rivers*, may be grown by some because of their earliness, as they ripen three weeks before *Early York*, which is a gain. *Dr. Hogg*, which was stated to be a great gain, has failed with me, and has been discarded; it is a free-setting sort, but the fruit was always dry, and the flavour not first-rate. *Prince of Wales* has also turned out inferior; not so *Princess of Wales*, which is in every respect first-rate, and is well described by Mr. Clark. I cannot agree with what he says about the *Lord Palmerston* Peach, although I have never obtained this sort with anything like the colour of Mr. Radclyffe's specimen. It is always pale with me, having only a slight flush on the exposed side; but when well ripened it is of excellent flavour, with very little indeed of the "pavie" about it. Last season, being an unfavourable one, the clingstone was more apparent; but even then it was useful, as it comes in after *Desse Tardive* and *Walburton Admirable* are over. *Lady Palmerston* is perhaps the best of the two; the fruit of this is very juicy, and though a yellow-fleshed variety, the flavour is excellent; it is rather later than *Lord Palmerston*. These sorts together continue the Peach season until Salway is ripe. I may say that all my experience has been obtained from pot trees grown in the orchard house.—J. DOUGLAS, *Loxford Hall, Ilford*.

GARDEN GOSSIP.

AN excellent suggestion has been thrown out by Mr. Fish, in reference to an *Election of Fruit-Trees*. He says, "One is constantly being asked what are the best fruit-trees for cottagers, or small suburban or country gardens, and after writing out lists of the best 6 Apples, Pears, or Plums, I have often

felt misgivings as to whether they were the very best that could be named." It is then suggested that our readers should be invited to send in the names of varieties best suited for cottagers' gardens, of the following kinds of fruits, namely—best 2 Peaches, 2 Nectarines, 2 Apricots, 3 Cherries, 6 Plums, (good Plums are very scarce in cottage gardens, and yet this is one of the most profitable fruits to grow, as it nearly always finds a ready sale), 6 Pears, 6 Apples, (those preferred that are alike good for eating and cooking), 2 Red Currants, 1 Black Currant, 2 Raspberries, 3 Strawberries, 4 Gooseberries, 4 ditto., for size. These smaller fruits are wonderfully neglected in cottage gardens, and in very few are the best varieties found. Now a good variety takes no more care nor room than a bad one, and it is a sheer loss, to those who can ill afford it, to continue growing such. Then longer lists might be given for larger gardens—the best 6 Peaches, 6 Nectarines, 6 Apricots, 6 Plums, 6 Cherries, 12 Apples, 12 Pears, 12 Gooseberries, 6 Raspberries, 6 Strawberries, &c.; and yet another, of 9 Peaches, 9 Nectarines, 9 Plums, 6 Apricots, 9 Cherries, 24 Apples, (6 to be kitchen sorts), and 28 Pears, (4 being the very choicest stewing sorts). If a good many correspondents would respond to this suggestion, some useful information would assuredly be gained, and a good deal of trouble in answering inquiries might be saved. We shall be happy to condense the substance of any such returns that may be sent to us.

— As regards the *Weather in 1872*, and the *Prospects of the Fruit Crops*, Mr. Tillery writes from Welbeck as follows:—"Seldom has such a wet and open beginning of the year been observed as the present, for up to this date (February), rain more or less has fallen on nearly every day. After the severe frost in the last week of the year 1860, the January and February were open and mild months, but keen frosts in March and April injured vegetation and the fruit-tree blossoms severely. In 1869, the winter months were likewise open and mild, and free from any severe frosts, but the spring months following were ungenial, and the fruit crops in this locality were very partial. Weather in season is therefore always the best for our climate, and, from present appearances, should the coming spring be severe, fruit-trees now fast coming into bud will suffer. The *Pear* trees on quince stocks seem the most active at present, for many varieties are showing the flower-buds in an advanced state. *Apricots*, *Peaches*, and *Nectarines* on the walls are likewise fast coming into bloom; and where the retarding system can be carried out, it will be very desirable this spring to do so. The *Apricot* trees, on account of their ripening heavy crops last year, are not showing so well as usual for blossom-buds; and *Peaches* and *Nectarines* have not ripened their wood well, owing to the wet and cold summer and autumn. Materials for protection will therefore be required to be got ready sooner than usual for these varieties of wall fruit. *Bush-fruit*, such as *Gooseberries* and *Currants*, are beginning to show their foliage, and if they do not get a check soon they will be in great danger, at flowering time, of the crop being injured. All strong soils are so saturated with moisture, that nothing can be done in the way of preparing them for early spring crops. Altogether, the season is a very peculiar one, and gardeners will have to bring extra foresight and energy into practice for saving or forwarding their vegetable and fruit crops."

— FROM the report presented at the annual meeting of the *Royal Horticultural Society*, it appears that the Society's connection with the International Exhibition resulted in a net balance of over £5,000 being handed over to the Society; while the Nottingham Show also resulted in profit (£774), which is encouraging as regards the Birmingham meeting of this year. The Society has appointed Mr. Thiselton Dyer as Professor of Botany, in aid of the Botanical Director, the Rev. M. J. Berkeley. The general duties of the new professor will be to conduct the scientific business of the Society.

— MESSRS. DICK RADCLIFFE and Co. call our attention to the new Umbellifer, *Callisace dahurica*, as an ornamental-foliage plant of enormous dimensions, much larger than any of the species of *Heracleum*. The leaves grow to a length of six feet and a width of four feet. The flower-stalk is nearly eight feet high, and five inches in diameter at the base. The plant is a native of Siberia and the Island of Saghalin, and was for a long time known only in herbaria. It will, no doubt, be a most interesting subject for our gardens, on account of its large size, its noble form, and its hardiness.

— UNDER the name of *Salix elegantissima*, Professor Koch describes a new *Weeping Willow* from Japan, with branches even more markedly pendulous than those of *S. babylonica*. The latter name, it is shown, is a misnomer, the

plant being of Chinese origin, and hence Dr. Koch proposes to call it *S. pendula*. *S. elegantissima* has been called in nurseries *S. Sieboldii* and *S. japonica*, but both these names are pre-occupied. It has the great advantage of not being injured by insects like other Willows.

— As regards the *Pine-apple Nectarine*, Mr. Fish writes:—"I have much pleasure in endorsing all Mr. Douglas says concerning the merits of this splendid Nectarine. I have grown it for several seasons, and it is almost impossible to conceive of anything more rich and luscious; it has a firm flesh, and bears carriage well. I need add no more, than that it is a great improvement in flavour upon the Pitmaston Orange and Hunt's Tawny, when these are found at their very best. The Victoria is also a very fine Nectarine. I have several of the newer varieties raised by Mr. Rivers, on which I hope to report favourably in the autumn."

— M. CARRIÈRE has lately given the name of *Buxus Fortunei* to a Chinese Box, cultivated as *B. longifolia*, a compact-growing evergreen bush, with numerous erect branches, bearing long narrow sub-cuneiform leaves. This Box is said to be hardy, enduring the severest winters of the climate of Paris. The true Indian *B. longifolia*, on the other hand, is tender, has loose branches, long, distant, spreading leaves, attenuated at both ends; but it is nevertheless an elegant shrub, recommended as an evergreen suitable for the decoration of apartments.

— ONE of the most interesting of formal subjects for the summer decoration of the conservatory and terrace-garden is to be found in *Standard Lemon-scented Verbenas*. The plant is always a favourite for its gratefully-scented leaves, and trained up, with a well-balanced head, has a very good effect. At Ashridge Park there is a very fine set of plants of this character growing in tubs, which in summer are set out on the terrace walk. These are perfect in symmetry, with clean stems about 5 ft. high, and bluntly conical heads a yard across.

— A METALLIC paint for the *Preservation of Wood and Iron*, brought into use in America, is thus described in the *Scientific Review*:—"To about 40 gallons of wood tar (preferably the best Stockholm), 40 gallons of naphtha, of about 18° Beaumé specific gravity, or so much as shall render the tar of the consistency, or nearly so, of boiled linseed oil, are added. They are mixed carefully, and about 24 hours are allowed for subsidence. The purified tar-mixture is then drawn from the dregs, and to 40 gallons of this about 30 lb. of dry ochrey iron ore (commonly known as bog-iron ore) are added in the form of very fine powder, which must be thoroughly incorporated with the tar. When this has been done, about 40 lb. of commercial white arsenic and 100 lb. of oxide or sub-oxide are added, and the whole is reduced to a thick paint by a mill or otherwise.

— DR. DINGLER states that *Wood*, thoroughly impregnated with a strong solution of common salt, resists decay. This mode of preservation is said to answer well for underground work, such as in mines and coal-pits.

Obituary.

— DR. SPRING died at Liège, on January 17, in his 59th year. He was German by birth, but made Belgium his adopted home; he was a writer on subjects relating to medicine, physiology, geology, and botany, but is more especially known for his monograph on the *Lycopodiaceæ*.

— JAMES NEILSON, Esq., of Rose Hall, Falkirk, died on January 23, aged 62. His love of gardening was unbounded, and had led him to form one of the choicest collections of plants, his special favourites being Roses, Rhododendrons, Clematis, Conifers, Ivies, Hollies, and Hardy Ferns.

— MR. THOMAS OSBORN, of the Nurseries, Fulham, died on January 28, at the comparatively early age of 53. His thorough rectitude of principle, and genial, amiable, disposition, endeared him to all who knew him.



Dipladenia insignis.

DIPLADENIA INSIGNIS.

WITH AN ILLUSTRATION.

WE have now the pleasure of introducing to our readers what we believe to be the finest *Dipladenia* hitherto known, and in this opinion we are not singular, for one of our most experienced plant-growers, to whom flowers were sent in October last, pronounced it to be quite distinct, very fine in colour, and with greater substance than any other he had previously seen, adding that if its constitution and free-flowering habit were equal to those of *D. amabilis* (of which we gave a figure in our volume for 1866), it would prove a decided acquisition. We have already noticed it in the *Gardeners' Chronicle*, under the name of *DIPLADENIA INSIGNIS*. The flowers were from 4 in. to 4½ in. in diameter, of a rich, deep, rosy carmine, as deep on the outer as the inner side of the corolla, the base of the tube being white, the white sharply defined. It is in the substance of the flowers, and in the brilliant colour, that the chief merits of this novelty, as an ornamental plant, are to be found.

Dipladenia insignis was raised by Mr. S. Fenwick, gardener to John Waterhouse, Esq., of Well Head, Halifax. It is a seedling from *D. amabilis*, was raised in 1869, and flowered for the first time during the past summer, the plant, though only growing in a 7-in. pot, proving to be very floriferous, and continuing for some weeks in flower. When it comes to be freely grown, and well established, we may expect to see it even finer than it is represented in the accompanying figure, which Mr. Fitch has happily thrown off. We understand that the stock is in the hands of Messrs. Veitch and Sons, of Chelsea, by whom it will in due time be sent out.—T. M.

ZONAL PELARGONIUMS FOR THE CONSERVATORY.

AMID the rage for bedding plants, there is a danger of glass-houses being starved. Only a few years ago every inch of glass was stuffed full. Now the current is running strong in the contrary direction, and there is some danger of glass structures being impoverished that our gardens may be crammed. Among the countless hosts of bedding plants turned out, a few of the choicest might well be reserved for in-door decoration. Choice Verbenas, Petunias, Lobelias, Calceolarias, and even such things as Amaranthuses, Iresines, Alternantheras, well-grown in pots, form objects of striking interest and great beauty under glass, but all such plants sink into tameness when compared with Zonal Pelargoniums. With a fair collection of these latter in ordinarily skilful hands, almost any house might be kept in a blaze for the greater portion of the season.

Everyone is familiar with the decorative value of the so-called Show and Fancy Pelargoniums. But the Zonals exceed these at their best, while they are grown to perfection with a tithe of the trouble. Valuable at all seasons of the year, they are beyond compare admirable for the autumn. There is hardly another

tribe of plants that can do us such good service. Amid their glowing brightness of colouring we may forget the dead and falling leaves and fading flowers outside, and rejoice in a summer-tide of beauty. This is one of those pleasures that the shelter of glass ought to provide—the making of a difference between the appearance of things within and without, and it is never enjoyed with a keener relish than late in the autumn, especially when the dull days are fairly lighted up with the glory of Zonal Pelargoniums in full beauty. But “good wine needs no bush,” and the cultivation of these plants in pots needs no further advocacy. I will, therefore, now give a few plain instructions how to grow them well with little trouble.

Young plants are best, not but what old ones flower as fine or finer. And Pelargoniums of this class will live and thrive for nobody knows how many years. But as the plants grow so fast, and look best for most purposes in 8-in. pots, there is no reason for keeping the same plant for more than eighteen months or two years. Strong cuttings may be inserted, one in a pot, in June or July. Or a few healthy plants may be potted from the general stock at bedding-out time in May, and these pushed on rapidly with manure-water, and stopped every month till September for flowering in 6-in. or 8-in. pots in October or November. But it is the better plan not to flower the plants the first season. Shift the cuttings as soon as rooted into a larger pot; as soon as it has made two or three leaves stop it, two or three more stop it again, and so on throughout the season. If the plants grow fast, they may need two shifts before the middle of September, but they should not be wintered the first season in pots larger than 4-in. or 5-in. in diameter. From first to last the cuttings should stand full in the sunshine, out of doors. Of course, they will require liberal watering. It is best to plunge the pots in cinder-ashes, to check evaporation. All flowers are also to be picked off as they appear, and no dead leaves should be seen.

Towards the middle or end of September, house the plants for the winter, placing them near the glass in a temperature of from 40° to 50°, and keep them rather dry. The less growth the plants make till the following March the better.

The object of all the foregoing treatment has been to lay the foundation of the plants strong and sure. It needs caution in winter to hinder this strength from being dissipated into growth, in the absence or weakness of that great source of all strength, the sun. When he arises to shine in force, the plants may be permitted to move on. When the tops have grown an inch or so, give the pot-bound roots a fresh run in 5-in. or 6-in. pots, carefully removing all the exhausted earth possible, and slightly unwinding the matted roots, so as to give them a good chance of getting hold of the new earth. When the roots have got a good grip of the earth, and the shoots have made a leaf or two, stop them again. About the end of April or beginning of May, give the plants their final shift into 8-in., or if wanted very large, into 10-in. or 12-in. pots. But beware of over-potting, which is positively injurious, alike in an artistic and cultural point of view. What looks worse than a comparatively scant head

of blossoms crowning a huge pot; what more disappointing than a rough coarse-looking plant with little bloom? To escape both, shun overpotting. Towards the end of May, remove the Pelargoniums to a sunny sheltered spot out-of-doors. Plunge the pots to the rims, and top-dress the surface with some sweet half-rotten manure or cocoa-fibre.

The summer treatment consists in regular waterings, weekly pickings of every flower as soon as it shows, and incessant stoppings of any shoot as soon as it forms two or three leaves. The result is a forest of strong shoots, the weakest of which must be thinned out. As the season advances, get the plant into shape. Some prefer them flat, some slightly raised in the centre. Properly grown, no stakes will be needed. The shoots will be steady enough to support themselves, and the flower-stems sufficiently short and sturdy to support any sized truss in an upright position. About a month or five weeks before the plants are wanted in full beauty, leave off all stoppings of shoots and removals of flower-stems, and they will throw up a perfect forest of bloom. About the middle or end of September remove the plants under glass, placing them as near to it as convenient, giving abundance of air, and keeping the temperature at from 45° to 55° : In such position, and with careful and liberal waterings of manure-water, they will continue in full beauty for two or three months.

The varieties are endless, and omitting variegated sorts, which are not so effective for this work, the following will be found good for pot-culture. Doubtless there are newer and it may be better sorts, but I have not proved nor seen them. These are good and cheap, and highly effective:—

DOUBLE VARIETIES.

Madame Lemoine.	Marie Lemoine.	Ascendancy.	Emulation.
Victor Lemoine.	La Vésuve.	Crown Prince.	Victor de Lyons.

ZONALS.

Clipper.	Lord Derby.	Amy Hogg.	Solfaterre.
Leonidas.	Excellent.	Lady Constance Gros-	Jean Sisley.
Dr. Lindley.	Persian.	Bayard. [venor.	Pride of Kent.
Purity.	Sambo.	Mrs. William Paul.	L'Aurore.
Madame Werle.	Indian Yellow.	Master Christine.	Demosthenes.

NOSEGAYS.

Eclat.	Excelsior.	Emmeline (Bull).	Monitor.
International.	La Grande.	Cybister.	Sunlight.
Star of the North.	Grand Duke.	Charles Dickens.	Clio.

As to soil, any sound tolerably rich soil will grow Zonal Pelargoniums. A sound yellowish turfy loam, with one-third rotten farm-yard manure, and a sprinkling of charcoal, silver-sand, and inch bones, is better for them than any compost compounded of one-sixth of this, a fourth of that, and a third of some other thing. Simple soils are best for most plants, and most assuredly for the pot cultivation of Zonal Pelargoniums.

Under-potting should be the rule, if a maximum of blossom is desired. When under stress of an immense floral burden the plants can be assisted with manure-water. No plants profit more from the application of liquid stimulants than Pelargoniums, and fortunately for us they are not at all squeamish in their choice of drinks—guano, pigeon-dung, cow-dung, soap-suds, or liquid excrement of pigs,

horses, and cows, being received and relished with apparently equal avidity, and to the same good purpose. Only dilute the strong liquors sufficiently, and give them often enough, and the plants will assuredly make a good use of them. Few plants can convert sewage with greater despatch and to better purpose than Zonal Pelargoniums. You may almost see them transform death into life, and corruption into beauty and glory before your eyes.—D. T. FISH.

GARDEN LITERATURE.

UNDER this head, the first subject which we have now to refer to, is a grand imperial folio publication, to which we have before made allusion, and which is entitled *LES PROMENADES DE PARIS*.* This sumptuous work, which was commenced when Paris was in its glory, and which represents Paris as it was in those halcyon days which preceded her recent disasters, gives a minutely detailed account of the history, formation, and renovation of her public gardens and parks, her squares, and her tree-embellished boulevards, and from this point of view has now acquired historic value. A large proportion of the book has been issued, those parts relating to the Bois de Boulogne, and the Bois des Vincennes, being completed, or nearly so. The MS. of much of the remainder was, we learn, destroyed at the Hôtel de Ville during the disturbances, but fortunately the author is able to replace it, so that the work will sustain no loss or abridgment in consequence. As a drawing-room book, there are few which can compare with this for the luxuriousness of its typography, and its numerous illustrations, and those who are induced to add it to their libraries on this score will not be disappointed. From a gardening point of view, it has a double interest, derived from its value to proprietors in suggesting features which they may desire to see carried out on their own demesnes, and from the hints which landscape gardeners and cultivators, who may be charged with the details of working out improvements, may derive from it. The numerous plans, both on wood and steel, are especially valuable. There are, besides, many illustrations of the ornamental plants used for decorating the French gardens, some of which, through the courtesy of the publisher, we are enabled to introduce to our pages, and of which the annexed figure of *Philodendron pertusum* is an example, this being one of the sub-tropical plants which the Parisian style of gardening has done so much to introduce amongst us. Such a book as this should find its way into every public library, as well as to the book-shelves of every country gentleman.

We have further to note the completion of the volume on *ALPINE PLANTS*† by Mr. Wooster. The object of this work has been to popularize a most interesting series of plants, and we trust it has met with such an amount of support as may induce the author to renew his labours. There are 54 plates, representing upwards of 100 subjects; these are printed in colours, and in most cases furnish very faithful and happy illustrations of the plants, which are selected as “the

* *Les Promenades de Paris*. Par A. Alphand. Paris: J. Rothschild.

† *Alpine Plants*. Edited by David Wooster, F.R.H.S. London: Bell and Daldy.

most sterling and beautiful of the Alpine flowers." Various interesting particulars, respecting the subjects of the plates and their near allies, constitute the letterpress, while an introductory chapter enters more fully into the general



PHILODENDRON PERTUSUM.

details of culture. The book will form a choice addition to our garden literature, and its appearance is opportune, when the taste for herbaceous plants is reviving.

In a little volume entitled *SCRIPTURE AND NATURE* (Hodder and Stoughton) we have rather a theological than a horticultural subject, and one, therefore,

which it is beyond our province to criticize. The intention has been to illustrate some of the grand truths of revelation, by analogies sought for amongst the operations of the garden; and if this should lead to the better appreciation of the leading subject by any of the readers of the book, we need not look too closely into the horticultural skill of the writer.

THE FAIRFIELD ORCHIDS* is the title of a thin 8vo. volume, which is intended to serve the double purpose of a descriptive orchid catalogue, and a treatise on their cultivation. The collection at Fairfield extends to nearly 400 species and varieties, and as a ready reference to a popular description of these—amongst the most select orchids grown—the book will be useful to all who take interest in this class of plants. This forms the bulk of the work, and appears to be fairly well done. The introductory chapters discuss the leading points of orchid management, and as the cultivation of these plants at Fairfield is particularly successful, being made the object of close study, we have no doubt these cultural chapters will be read with avidity by those who have orchids under their care. As an elegantly printed, useful book, and a very successful attempt to improve the status of trade catalogues, we look upon this volume as deserving the warmest commendation. The glossary with which the book closes is so arranged as to be really interesting.—T. M.

TREES OUT OF PLACE.

HOW often in the course of our rambles do we observe fine trees which have outgrown the situation in which they have been planted? Though pleasing and appropriate when small and of a pretty shape, they appear now to have grown quite out of character, and to be altogether unsuited to the position they occupy. It is about flower gardens, lawns, and pleasure-grounds, and close to old castles, halls, and mansions, that we mostly observe these incongruities, such as fine old Cedars of Lebanon, old Larch, *Cupressus sempervirens*, *Ilex* or Evergreen Oaks, Yews, sometimes even Poplars, Horse-Chestnuts, Elms, Sycamores, &c.

The same error is still rampant, as may be observed almost anywhere throughout the United Kingdom. We may see, if we will but observe, the new and rare species of *Pinus*, *Abies*, *Cupressus*, and *Taxus*, with *Cedrus Deodara*, *C. atlantica*, *Araucarias*, *Wellingtonias*, *Cryptomerias*, and many other large-growing trees, planted as if little or no foresight or consideration had been exercised—as if their stature and habits had not been studied previous to planting them. It might appear in such cases as if the gardener who planted them did not know what he was about, but this is seldom the case. The reason why such things are to be seen is in most cases this:—A gentleman or a lady having procured a new and pretty plant, selects a place in which it is to be planted—a convenient place, perhaps, so far as regards their being able to watch its growth and its habits; it is quite right

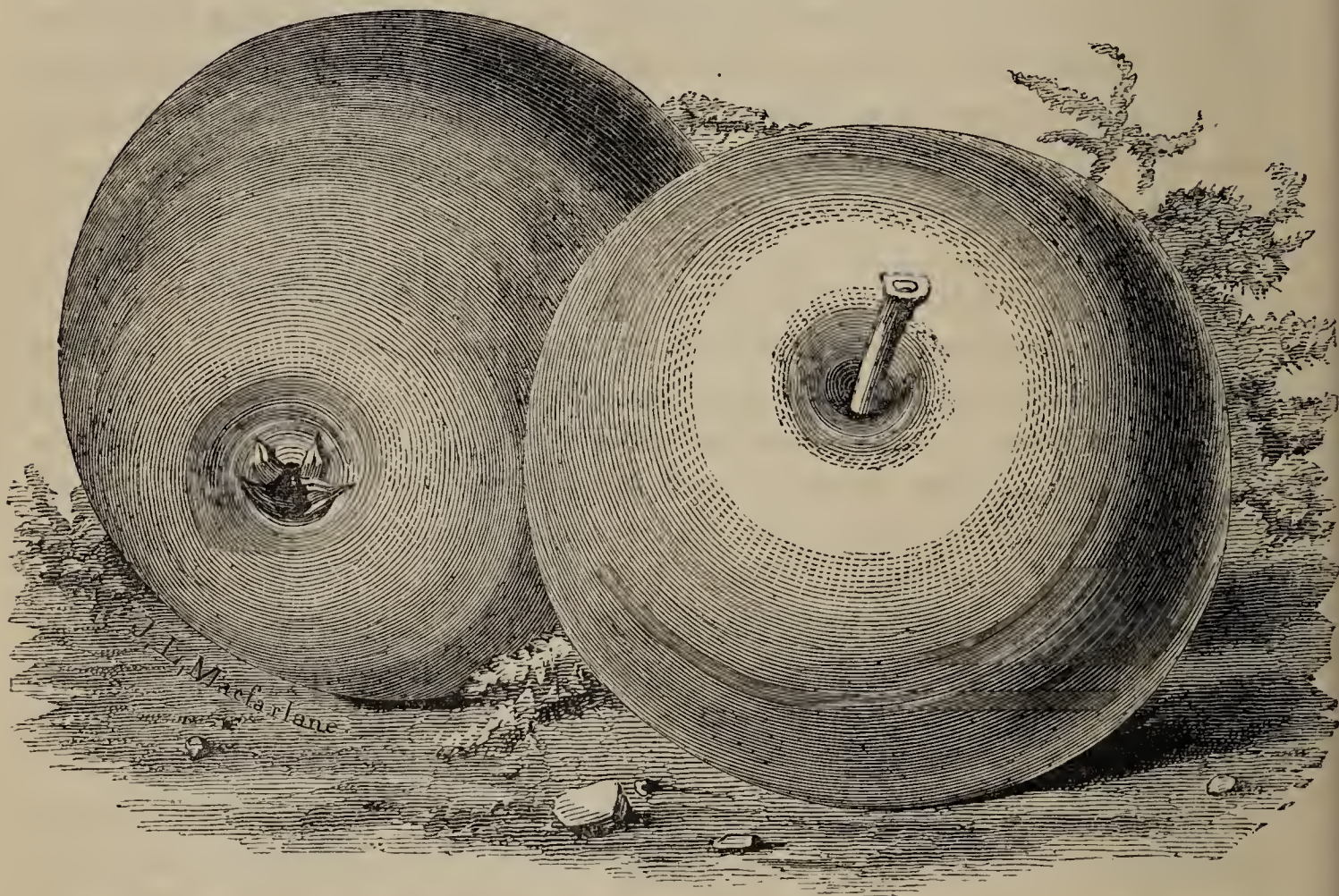
* *The Fairfield Orchids*: a Descriptive Catalogue of the Species and Varieties Grown by James Brooke and Co., Fairfield Nurseries, and Victoria Street, Manchester. London: Bradbury, Evans, and Co.

it should be so. Others are planted as memorials of births, of coming of age, of marriages, or of deaths; others to commemorate royal and other visits. Some are, no doubt, planted in small places because the owners are fond of fine trees. Some are planted in and about large places, by those who lack foresight; but it happens that a large proportion of new trees, when first introduced and while expensive, are planted in pleasure-grounds, lawns, and flower gardens, by the directions of the proprietors, as may everywhere be seen until this day. Nearly all the *Araucarias* throughout the country, for years after their introduction, were thus planted. All the first *Araucarias* planted at Bicton were planted in the flower garden. So also with *Cedrus Deodara*, and many species of *Pinus*, *Abies*, *Juniperus*, &c., all of which were subsequently removed by me; except a *Pinus macrocarpa* and *Cedrus Deodara* that were 60 ft. high or more, and which were still left.—JAMES BARNES, *Exmouth*.

KITCHEN GARDENING FOR APRIL.

AS this is generally a month of showers and sunshine, advantage should be taken of every favourable opportunity for forwarding work. If from bad weather or any other cause any of the operations recommended last month remain undone, no time should be lost now in getting them completed. All seeds intended for early crops should be sown at once. Make successional sowings of the late varieties of *Peas* during the month; *Ne plus Ultra* is a pea of great excellence. Earth-up and stake those sown last month as soon as they are sufficiently forward. Make sowings of *Long-pod* and *Windsor Beans* for successional crops. Sow the main crop of *Carrots* at the beginning of the month in rows a foot or fourteen inches apart; also *Parsnips*, if not sown last month, and some *Beet* for an early crop. Sow the main crop of *Broccoli*, *Savoy*, *Brussels Sprouts*, *Borecole*, *Cabbage*, *Cauliflower*, and *Lettuce* at the beginning of the month in four-foot beds of light rich earth, in an open but sheltered situation, and cover over with nets to protect from birds. When the plants are up, and the seed-leaves fully developed, the netting should be removed, and a little slaked lime strewn over them as a preventive against slugs and fly. As soon as the plants are large enough to handle, transplant as many as may be required into nursery-beds, to strengthen before they are finally planted out. Towards the end of the month the main crops of *Beet*, *Salsify*, and *Scorzonera* should be sown. Sow *Dwarf French Beans* on a warm border towards the end of the month, and make the first sowing of *Scarlet Runners* about the same time. Sow some *Early Dutch* and *Snowball Turnips*; also some *Spinach* and *Radishes*. Sow *Mustard* and *Cress* weekly. Sow *Celery* for late crops; continue to prick out that sown in February and March about four inches apart on light rich soil, and protect with frames. Sow an abundance of *Parsley*. Sow *Sweet Basil*, *Marjoram*, *Thyme*, &c., towards the end of the month on warm borders, and cover lightly with fine soil. Make fresh plantations of *Herbs*. Pot off *Tomatos* and *Capsicums*. Plant out *Cucumber* and *Melon* plants, and sow a few more seeds for successional crops.

Plant out *Cauliflowers*, *Cabbages*, and *Lettuces* for succession. Remove hand-lights off *Cauliflowers*; earth them well up, and give them plenty of water and liquid manure. Get late *Potatos* planted without delay. Stir the soil well amongst advancing crops; keep the hoe constantly at work in fine weather, and lose no favourable opportunity at this season of the year to keep down weeds, which now begin to grow apace, and, if neglected, will soon spread, rob the soil, and stock the garden with seeds for years to come.—M. SAUL, *Stourton*.




ASHMEAD'S KERNEL APPLE.

THIS delightful apple, remarks Dr. Hogg in his *British Pomology*, was raised at Gloucester about the beginning of the last century by Dr. Ashmead, an eminent physician of that city. It has long been a favourite in all the gardens of West Gloucestershire, but like the Ribston Pippin, it seems to have remained long in obscurity before its value was generally appreciated. "The fruit is below medium size, round and flattened, but sometimes considerably elongated. Skin light greenish yellow, covered with yellowish brown russet and a tinge of brown next the sun; eye small and partially open, placed in a moderately deep basin; stalk short, inserted in a round and deep cavity; flesh yellowish, firm, crisp, juicy, sugary, rich, and highly aromatic; a dessert apple of the very first quality, possessing all the richness of the Nonpareil, but with a more sugary juice. It comes into use in November, but is in greatest perfection from Christmas till May. The tree is very hardy and an excellent bearer."

As a dessert apple of the first quality, this variety deserves to be more exten-

sively grown. Messrs. Wheeler and Son, of Gloucester, from whom our woodcut is borrowed, state that the apples realize a higher price in Gloucester market than any other sort. Specimens exhibited by them in February and again in May, 1868, at the meetings of the Royal Horticultural Society obtained a Special Certificate.—T. M.

CAMELLIA CULTURE.

E have not in our greenhouses, and probably there is not within the range of Flora's dominions, a more universally admired favourite than the Camellia. Its perfect proportions, richness of foliage, and purity of colour give to it a position, as a cut flower, which is perhaps not equalled by that of any other plant. And I may observe that in the setting-up of Camellias in vases, or otherwise, no other garniture than that of their own foliage is admissible.

To grow the Camellia to the greatest possible perfection, houses should be specially set apart for their culture; while to prolong the blooming period to the utmost, it is necessary to have two houses. I always look upon one large house as a great mistake; for by having a division, the early and late-flowering sorts may be separated, and a greater amount of success attained, than by one uniform temperature, though aided by every fertility of expedient. Let it not be inferred from this that I consider the Camellia difficult to cultivate. On the contrary, it is a plant of the easiest culture. And there is no reason why it should not be grown successfully by all who possess the advantage of a greenhouse. If certain conditions are adhered to, no plant is more easily managed, and none will render more perfect satisfaction to the amateur cultivator.

First, then, it is of the greatest importance that the soil in which they are grown should be of a suitable nature, and in none, either simple or compound, have I found them to succeed so well as in a tough, fibrous loam, from the sandstone formation. Loam partaking of a calcareous nature is always to be avoided. When such a loam as I have recommended is not attainable, they will luxuriate in a rich, soft peat, which should be cut into turves and stacked for twelve months previous to being used. They may be repotted at any time during their season of comparative rest, but the best time, and that least subject to risk, is after flowering. Except in the case of plants in small pots, they seldom require shifting; and so long as they have perfect drainage and proper soil there can be no greater error than constantly pulling them about. Their roots are so very brittle and susceptible of injury from any cause, that I consider it best to shift seldom, and liberally, using clean pots thoroughly drained, with an inch of charcoal over the crocks; the soil being pulled into pieces by the hand, and sharp sand only added to it, and being rammed firmly around the ball. After potting, if they can be given a humid atmosphere of 50° to 60°, they will be benefited. Air freely, and use shading only to prevent the direct action of the sun, which when allowed to shine upon the leaves when they are wet often causes blotching.

When the buds are set, the plants should have an abundance of air and all the light possible, moderating the use of the syringe—giving occasional syringings only, so as to keep the foliage clean. Avoid sudden transitions of any kind. Inattention to trifling matters after this stage is reached, is often the cause of bud-dropping, which not unfrequently results from forcing during the autumn months. They will not force at that season with any degree of certainty. To have flowers early we must encourage early growth, and select such sorts as have a disposition to flower early. I may here remark that early-flowering habits are greatly assisted by usage to forcing.

In selecting plants avoid those rank, attenuated examples so often met with, and which have been run up in a hot, humid atmosphere; they are often deceptive in appearance, with but few roots, and no constitution. Choose rather well-established plants that have been well kept under, and are sturdy in habit, for they only will give satisfaction. The following varieties may be relied on:—

Alba plena.	Lady Hume's Blush.
Alba Casoretti.	Leopold I.
Bealii.	Marchioness of Exeter.
Candor.	Mathotiana.
Contessa Lavinia Maggi.	Mathotiana alba.
Contessa Lavinia Maggi rosea.	Monarch.
Countess of Ellesmere.	Princess Baciocchi.
Countess of Orkney.	Reticulata florepleno.
Cup of Beauty.	Tricolor imbricata.
Imbricata.	Saccoi Nova.
Jenny Lind.	Valtevareda.
Jubilee.	Wilderi.

These twenty-four varieties I can fully recommend for their general excellence.—
GEO. WESTLAND, *Witley Court*.

HARD SOIL FOR ROSES.

I HAVE noticed a great many times that mechanical compactness of the soil is an element of success in the cultivation of Roses. For instance, some of the finest plants of *Gloire de Dijon* I have ever seen were grown in a gravel walk. They were planted in the walk itself by the side of a wall, with a foundation ever so deep; and the roots fed on, under, and among the gravel only, and yet these roses climbed over high iron arches, and grew and flowered with a vigour and profusion that I have never seen equalled. Sometimes, too, I have noticed unhealthy rose trees in good quarters, and on examination I have almost invariably found that the soil was loose. It might be rich, well drained, and abundantly stored with manure, but the roots appeared to lack the power of taking hold or thriving in a loose tilth. I should be glad to hear the experience of other rose-growers on this point.

Of course every cultivator is aware of two facts, both pointing to the same conclusion in favour of a hard soil. One is, that the dog-rose in a state of nature has mostly to endure great hardness. It makes its home on stubborn hedge-row banks and sides of ditches, often formed of the most sterile and

stubborn subsoil thrown out of the ditch-bottom. During the drought of summer its natural root-run becomes bound as with iron fetters, and yet see how it runs into shoots brown and strong, of one, two, and even three yards in length. Obviously a hard run suits it in a state of nature. Why should it not also, when the roots get a new crown of greater beauty? Why not indeed? It does suit it, and this is my second fact. As a matter of experience, we find that a stiff loam trembling on the verge of clay suits roses best. Whatever else the soil has or lacks, it must have stiffness, if it is to grow roses to perfection for any length of time. . Advisedly I put in this last clause about time, for no doubt by excessive manuring very fine roses have been grown on sandy, and indeed on all kinds of soil. But in their case it is the manure rather than the earth that helps the roses, and this question is not what may, can, or has been done under exceptional circumstances, but what soil suits roses best as a rule. The answer, I think, must be a stiff loam approaching to clay.

Another practical point of great importance is whether something beneficial might not be done to harden light and loose soils by artificial means for the cultivation of roses. I think a good deal may be accomplished. A very slight addition of clay exerts a powerful binding influence on light soils. Again, cowdung has a similar, though less powerful effect. Mere mechanical compression before planting with a rammer, or only treading the soil firmly down by the feet of man or horse, helps to make and keep it hard. All this compression should take place before planting; and it serves a double purpose. It hardens the root-runs of the roses, and likewise prevents the plants from being hung to the stakes by the soil subsiding away from beneath. The latter is one of the most common and disastrous catastrophes that happen to newly planted roses. Perhaps Mr. William Paul, who has been giving such charmingly instructive chapters on roses, will kindly tell us what he thinks about a hard soil for his favourites.—D. T. FISH, *Hardwicke*.

PROTECTING THE STEMS OF VINES, ETC.

FORMERLY it was more usual than now to see the stems of Vines outside a vinery, protected with hay-bands during the winter and spring. When that covering was neglected, or taken off too soon, the vines were liable to injury, as the following instance will show :—Some years back, at about the end of April, a neighbour of mine had the stems of his young vines exposed to severe frost and snow, when the crop was in blossom. In the morning the stems were covered with icicles, and when bright sunshine appeared the leaves and tender shoots turned black, owing to the sap-vessels being frozen. I need not relate the evil results of this upon the crop. That sad affair, however, reminds me of Mr. Standstill's very interesting account (p. 281, 1871) of two distinct crops of excellent grapes perfected last season, on two different parts of a vine, one in May, the other in October, the result of the vine being trained from a stove into a greenhouse. But what Mr. Standstill considers most remarkable is that the centre 25 ft. of the vine

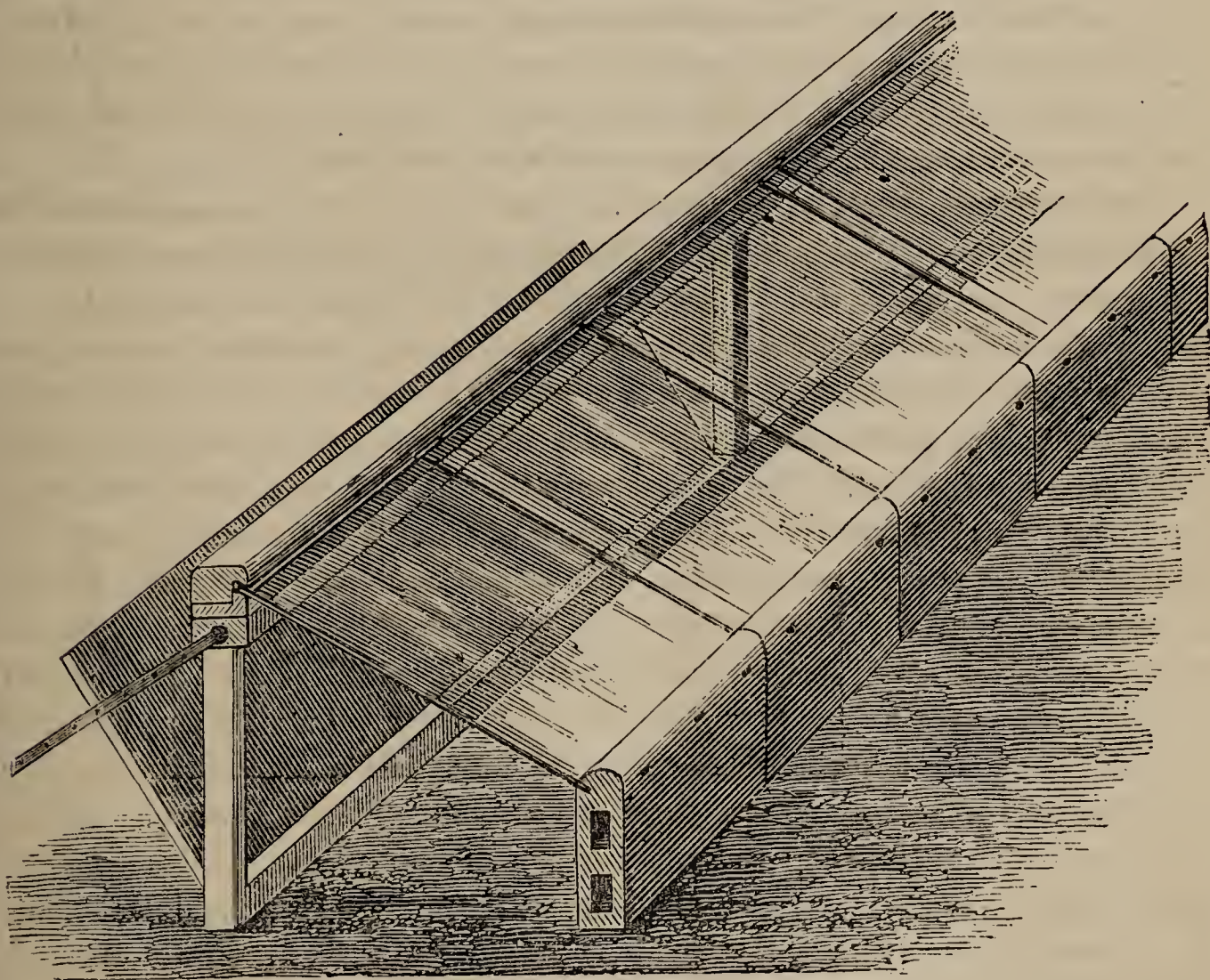
“remained as inactive as in an ordinary greenhouse.” Perhaps if those parts had been exposed in the same way as the stems in the case just mentioned, the results would have been similar. It should be known that success in all such novel cases of grape-growing depends much on the well-protected inactive parts of the vine. Such was the case with Mr. Standstill’s, for the shelter of the greenhouse was sufficient to keep the sap-vessels from the evil influences of the weather, while the previous season’s store of nutriment in the other parts of the vine in the stove, was sufficient for the wants of the plant until the leaves expanded, to produce more by their action upon the roots under the influence of the sun. Now, by this time, the parts of the vine in the greenhouse were active, for the crop ripened in September and October. What I have said respecting the winter store of nutriment in the vine is consonant with what occurs generally in plants, for whether liquefied by natural or artificial means, the sap excites growth before it is influenced by the roots. These latter come into action only after they are influenced by the atmosphere through the new or fresh leaves.

Now for Mildew on vines, on which Mr. Standstill invites information. The remedy he used may be good when sufficiently under control, but most dangerous if otherwise. Of late years I have had recourse to fumigating with sulphur on hot coals in a shovel, just before the vines were pruned, repeating the dose once after, and I have thus got clear of the pest; but so severe a remedy should not be applied until the “vines are at rest.” All other plants, too, must be removed out of the house, and care taken to close the apertures, to prevent the deadly fumes escaping into houses adjacent, or there will be sure grounds for regret. I further suggest that in pruning vines all tendrils should be carefully cut off; for both under and between their wire-like coils may lurk enough of torpid mildew to infect a whole house in the following season.—J. WIGHTON, *Cossey Park*.

THE HARDY PRIMROSE.

FOR a few years I have been selecting the coloured wild Primroses from the woods, in order to cross and seed them for the purpose of raising brighter-coloured sorts. This year I have filled three round beds with plants taken from a border of seedlings; they are now in full flower, and form by far the finest beds of early spring flowers I have ever seen. All the deepest crimson varieties are placed in the centre of the beds, and shaded off by plants of different lighter hues of red, mauve, and dove-colour. A band of golden-yellow ones comes next, and the outside row consists of pure white and cream-coloured sorts. The mild open winter has been favourable for the early flowering of the Primrose, and the present brilliant weather now shows them off in their brightest colours. In the same seed-bed some seedlings from a cross between a dark Polyanthus and *Primula cortusoides amoena* are coming into flower. Only one plant has, as yet, flowered with a distinctive character, and this is of the colour of a dark Alpine Auricula, with a small yellow eye, and considerably larger than the common Polyanthus.

I believe we shall find in the Primrose (when the best-coloured varieties are selected) one of the earliest and best flowers for spring bedding, and one whose fragrance on a sunny day in early spring is quite refreshing. On sheltered sunny banks in our woodlands and lanes no flower in early spring is so much prized as the Primrose, and this is followed by the Cowslip in the meadows. The Daisy, "the wee modest crimson-tipped flower" of Burns, is another general favourite for spring bedding, and it likewise makes a fine edging to beds of Primroses. The beautiful effect of these early spring flowers when massed together in beds is, in my opinion, far preferable to the glare and vulgarity of many of our bedding plants in the summer months.—WILLIAM TILLERY, *Welbeck*.




THE NOTTINGHAM PLANT PROTECTOR.

SINCE the original protectors were brought into notice by Mr. Rendle, many forms have been submitted for public approval by different individuals, and mostly, as is natural enough, improvements on the original design. We have already figured some of them, and we now add a woodcut of one compact and useful form, which Mr. Rendle states was exhibited for the first time at the Nottingham Show of the Royal Horticultural Society. "The patent grooved brick at the back is fixed on a wooden platform. The back is made of wood, and is moveable, so that the plants can be watered and attended to without touching the glass. These protectors are the best for summer or spring work, when much

watering and syringing is required. The whole can be packed up in a small compass and the glass in a box, and can be sent from one part of England to another for a few shillings." The moveable back no doubt greatly facilitates the performance of any necessary cultural attentions.—T. M.

VINE CULTURE.*

HEN we remember the great beauty and usefulness of the Vine and its fruit, we need not wonder that its name should hold an honourable place in the earliest pages of history. Poets have made it the burden of their song, orators have exalted it as an emblem of life, while rich and poor have joined in praising it for its charming beauty as a plant, and for the refreshing properties of its fruit. No wonder, then, that much both of money and of labour has been spent on its cultivation, not only in climates in which it luxuriates in the open air, but in others, like our own, in which it requires the aid of glass-houses or vineries, and in many cases the application of artificial heat.

Vineries may be built of any size and of nearly any shape, so much depends upon circumstances. For early forcing, houses with high-pitched roofs, in which the vines may receive all possible benefit from the sun's rays, are to be preferred. Others prefer low roofs, and the houses sunk like pits a little below the ground level; these have the advantage over the others of retaining the heat better still, though good crops have been grown under both systems. I think the high-pitched roofs are the best. For general work they should be neither very steep nor very flat; they are mostly built at an angle of 45° . The forms in general use are spans, three-quarter spans, and lean-tos. The size must be governed by the demand for fruit. The plot where the house is to be erected should be excavated 3 ft. deep; the front wall to the ground level should be arched, or what is much better, pillared at every four feet along the front, the pillars resting on good foundations, and standing the whole height from foundation to ground plate. By this method the roots have free passage from inside to outside. If the front of the house is required to be very high, then pillars must give way to brickwork. For lean-tos 7 ft. high in front and from 12 ft. to 15 ft. at back will form a high and airy house. The rafters should be 6 ft. apart, with movable sashes at top for ventilation. Wires 1 ft. apart are to be run across the house, and fastened to the rafters for supporting the rods. There must be a path or paths of stone or wood, and sufficient piping to keep up a brisk heat when required. For a house 45 ft. long and 18 ft. broad, four 4-in. pipes in front and two at back will be sufficient.

When the houses are built, the preparing of the borders inside and outside must receive attention; for very early forcing, inside borders are best; they save much labour in covering up, &c., and can be kept at a more equable temperature. For general work it is better to have borders both inside and outside; make no more than the inside border the first two years, adding about 3 ft. every year after-

* This terse and well-written sketch of Vine Culture does much credit to its author, who is one of the young gardeners employed at Thoresby.—ED.

wards, until the outside space is filled. In preparing the border draining must be the first work. A main drain should be cut at the lower end, and the bottom of the border made to fall gently towards it. The bottom should be concreted with lime and small stones, so that the water may freely pass into the drain; this also keeps the roots from penetrating the subsoil. When the concrete has set, cover it to the depth of 6 in. with broken stones; if the soil is heavy, cover these with turf, and the space is then ready to receive the compost, which should consist of rather heavy fibry loam, broken bones, and lime rubbish, well mixed together, and filled in so as to raise it a little above the ground level.

The house is now ready for planting, but before planting there must be propagation. This is effected by means of eyes taken from matured plants. They should be procured in the autumn from well-ripened shoots, and kept in damp soil till January of the following year; each eye should then be cut separately, leaving an inch of wood below the bud; insert these in soil up to the eye, and place them in gentle heat for a short time, gradually raising the temperature till they break. In six weeks they should be ready for potting off, using pots according to the size of the plants, and giving them a good strong loam. Place them in a house with top and bottom-heat ranging about 70°. In a short time they will require shifting into 8-in. or 10-in. pots. The soil should be made a little richer than before, with bone-dust or good dung. In these pots they will grow sufficiently strong for planting. By June or July they should be ready for removing to their permanent quarters, carefully planting one to every rafter, laying the roots all inwards, as they will soon find their way to the outside when this is prepared for them. The house should be kept at 70° fire-heat, and be shut up early, syringing over head. By autumn they will be well established. Having completed their growth, the temperature should be gradually lowered, and all the air possible given, that the wood may be well ripened, without which there will be no success. Many prefer to plant later in the autumn or in winter, when in a dormant state. In both cases prune well back, especially if the rods are weak.

In spring allow the plants their own time in breaking, as by so doing they start much stronger. After they once move, be sure they receive no check by a fall of temperature at night, or by admitting too much cold air during the day. Water copiously when required, keeping the paths and border sprinkled in bright weather. Pinching and training must be commenced as soon as the shoots are sufficiently long. Thin them out to one foot apart alternately on each side of the rod, to procure strong, short-jointed wood; pinch them at the sixth joint, and at every joint after. Thus ends the second year.

In the following year, start the house according to the time at which the fruit is required. In six weeks from starting they will have burst their buds, and will soon show the state of the crop. Thin the bunches well, especially on young vines; medium crops are best. When they come into bloom the temperature must not be below 70° or 75° at night—the former for Hamburgs, the latter for Muscats—and the atmosphere must be kept a little drier. After setting, which

will be in ten days or a fortnight, commence to thin, according to size of berries, and the time they will be required to hang. All late-keeping varieties should be well thinned; if not, the air cannot have free course through the bunches, and then moisture will gather, and decay will take place.

Great care must be taken that no insects become established. Mildew, spider and thrips are the chief enemies to the vine. Sulphur must be applied for mildew, and fumigation with tobacco-paper must be adopted for the others.—G. FORBES, *Thoresby Gardens*.

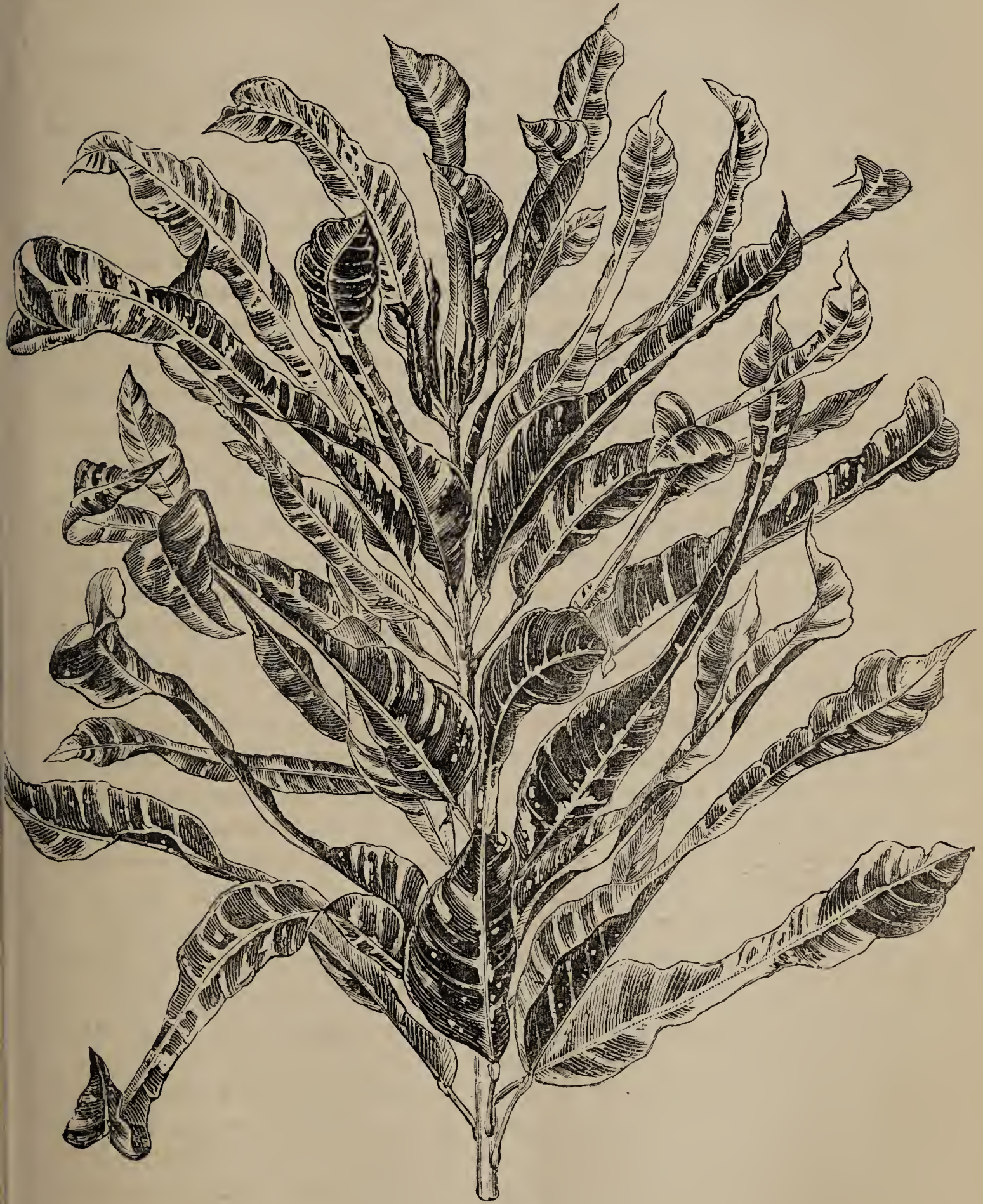
MAGNOLIA CONSPICUA.

JUST now, and for a month hence, one of the most attractive plants it is possible to behold, where it has attained anything like the size to which it is capable of growing, is the *Magnolia conspicua*. It is certainly one of the most prolific of flowering plants grown, and one of the most showy. On the east side of the west wing of Hatfield House is growing a most magnificent specimen of this *Magnolia*. The girth of its stem close to the ground is nearly four feet. It covers a space about 35 ft. in height and over 20 ft. wide, and is covered with blossoms from bottom to top, so thickly placed that I can count over 50 flowers in a square yard. Considering that the flowers are white or nearly so, and of the usual size of *Magnolia* flowers, one can imagine what a picture this plant will be while in bloom. I think Mr. W. Paul, of Waltham Cross, saw it in bloom last year, and pronounced it truly grand. If it has a fault, it is that of flowering before the foliage makes its appearance, for I think its beauty would be heightened considerably by a judicious mixture of its own foliage, which is of a lively shining green colour. I see by the *Cottage Gardeners' Dictionary* that the plant has been in this country about 80 years. The one I allude to must be at least 50 or 60 years old. I know it is growing in a thoroughly well-drained soil, but of what nature I am unable to ascertain, as the surface is paved with flagstones up to its stem. I am very much afraid that in these sensational times, gardeners—many of them, at any rate—are committing an error when planting, by not assigning a place to some of these old servants, and especially to this beautiful and noble-looking species of *Magnolia*.—THOS. RECORD, *Hatfield House, Herts*.

CROTON VARIEGATUM MULTICOLOR.

AMONG the many fine Crotons now to be found in our gardens, it is difficult to say which is the best and the handsomest; but without attempting to do so, and without criticizing their individual style of beauty, we have no hesitation in stating that the one of which we here give a figure, belongs to the best set, its rich colouring and somewhat grotesque form being alike pleasing. The Messrs. Veitch and Sons, by whom it was sent out, themselves describe it as “one of the most distinct of the many fine varieties of *Croton* found by the late Mr. J. G. Veitch in the South Sea Islands. The leaves attain a length of 7 in.

to 9 in., are very irregular in shape, oblong spathulate, tapering at the base, and irregularly constricted in the centre," with the point curiously dilated and twisted.



CROTON VARIEGATUM MULTICOLOR.

"The young leaves," they go on to say, "are of a light green blotched with yellow, but turning with age on the puckered upper surface into a glossy green, and irregularly blotched with yellow, reddish yellow, and red, the mid-rib crimson, the

secondary veins yellowish ; the under-surface being red. It has received its name from the great diversity of its colouring." We have seen this colouring developed in great variety and in great beauty on plants exhibited at the London flower shows.—T. M.

THE IMPROVEMENT OF THE POLYANTHUS.

I HAVE thought for some time how much we need improvement in the Polyanthus—a flower which has for so many years been much neglected that I fear most of the fine old varieties have become extinct. At any rate, they are very scarce, and are seldom seen at our exhibitions. I saw some exhibited a few years ago, and to my astonishment, the first prize was awarded to a collection containing several pin-eyed flowers—a pin-eye being considered by the florist as a great defect, sufficient to secure the discarding of any varieties in which it is to be found. Possibly, from their having been so long neglected, the standard of perfection has been forgotten. It is much to be regretted that so beautiful a class of early spring flowers should be lost sight of, and I hope that an effort will be made to restore them to their former position. The first step would be to induce those, if any there be, who possess some really good varieties, to save the seed from them. They produce seed in abundance, and are of very easy culture. There are thousands of seedlings raised annually, but we seldom hear of any good ones, which I attribute to want of care in saving the seed. It is better to save seed from eight or ten plants that possess good properties, than from a hundred bad ones. Although the pin-eyed flower is imperfect, it is sometimes, as regards other points, such as shape, colour, and marking, almost perfection, and should any such be found among the seedlings, they should not be destroyed, but they should be fertilized with the pollen from perfect thrum-eyed flowers. In fact, the pin-eyed flowers offer a better opportunity for hybridizing than the thrum-eyed ones. This course, if persevered in, would, I am sure, be attended with success, and would be a step towards the improvement of this very old favourite.

Now, as regards perfection in the Polyanthus, the flowers should possess the following properties:—The pips should be large, flat, and quite circular ; the tube should be well filled with the thrum or anthers ; the eye should be quite round, of a bright clear yellow, and perfectly distinct from the ground ; the ground-colour should be black, or a beautiful dark crimson, or a bright scarlet, and there should be one distinct stripe in the centre of each division of the pip, running quite through to the eye ; the edging should resemble a bright gold lace, clear and distinct, and nearly or quite of the same colour as the eye and stripes, so as scarcely to be distinguishable. The truss should be large and compact, similar to a fine truss of an Auricula.

Polyanthuses generally grow much better in the open ground than in pots, as they are very impatient of heat and drought, and frequently suffer during the dry hot weather if watering is neglected. Some years ago I had about

a hundred pots of selected seedlings. I kept them in small pots during the winter, and early in February I potted them into 32-sized pots, using good fresh loam, and some old rotten cow-dung. The plants grew vigorously and bloomed very well. They were placed in a shady situation, and kept properly watered during the summer months. In the autumn a great many of the plants appeared to be dying, which I attributed to the very hot, dry summer, but on examination of the soil, I found to my surprise that the roots of the plants had been eaten off by a small white grub, which is as destructive to all this class of plants as the wire-worm is to the *Dianthus* class. I have frequently found this kind of grub since, but only where old cow-dung had been used. The same kind of grub is equally destructive to the *Auricula*, and would soon destroy a whole collection. No doubt the *Polyanthus* is fond of old cow-dung, which has been very generally used for it, but I cannot help thinking that hundreds of plants have been destroyed by this insect, and probably the cause of the loss has not been known.

I offer these few practical hints as a guide to those who are not conversant with the *Polyanthus*. I would recommend that the plants should be grown in a rather stiff loam, with some old rotten stable manure and leaf-mould, well mixed together; this will be found to suit them well, indeed, much better than a lighter soil. Plant them in a shady situation, and keep the surface of the soil stirred whenever it becomes adhesive. They should be kept watered during the dry, hot weather; this is very essential as a means of keeping them in a healthy state.—
JOHN BALL, *Slough*.

CULTURE OF OXALIS BOWIEI.

THIS old and well-known plant is seldom to be met with in plant collections at the present day—a rather remarkable circumstance, seeing that it is of easy cultivation, and one of the handsomest of the whole genus. It is also so hardy that in a fine autumn, it will with good management flower when planted in warm sheltered places in the open border. It is, however, well worthy of pot-culture for the decoration of either the greenhouse or the conservatory. Here we plant the bulbs in well-drained 6-in. pots about the middle of July, the bulbs being inserted deeply in the soil. The pots are then set out-of-doors, and little or no water is given except what falls from the clouds until the plants make their appearance on the surface, when they are placed under glass in a cold pit or frame. The low spreading foliage rapidly extends over the surface and edges of the pots; and its bold dark-green fleshy shining leaflets produce an interesting effect. The flower-stems soon afterwards make their appearance, and rise to the height of 6 in. or 8 in., each producing an umbellate cluster of brilliant rose-pink flowers, fully an inch in diameter, and which last for a considerable time. The foliage keeps green through the winter in a temperature but little above freezing-point. In spring, it is kept dry; and when ripened off the bulbs are taken out of the soil for six or eight weeks, previously to replant-

ing. This serves to induce them to start more regularly at the time wanted.—
J. WEBSTER, *Gordon Castle*.

[We have this fine *Oxalis* in great profusion at the Chelsea Botanic Garden, planted besides a gravel walk, at the foot of the front wall of a plant stove, where it has been for years, and has spread amazingly, generally yielding two profuse crops of its brilliant rosy flowers annually.—ED.]

FRUIT CULTURE.—APRIL.

THE pruning of fruit-trees should be completed ere this, as many kinds will now be in full flower. Grafting, if not finished last month, may be done in the early part of this. Newly-planted trees should be well watered in dry weather, and well mulched afterwards, if not already done. Pay particular attention to the protection of *Peaches*, *Nectarines*, and *Apricots*, whilst they are in bloom. Let the trees have full exposure on fine days, but be careful to cover them well up at nights. Attend to the timely thinning of the fruit after it is set. Towards the end of the month disbudding may be commenced, —but there should not be many removed at first. The young shoots of *Peaches* are very liable to the attacks of aphides, which should be destroyed on their first appearance, otherwise they will injure the new growth. Tobacco-water is an effective remedy; a slight syringing with it occasionally will keep the trees clear of them. Run the hoe between the strawberry rows, to loosen the surface and destroy weeds.

IN-DOORS.—Attend well to the watering of the *Pine* plants that are swelling their fruit, and give them some liquid manure occasionally; tie the fruit to stakes to keep them upright. Remove the best successions into the fruiting house as fast as the fruit is cut. The succession plants shifted last month will now begin to root freely into the fresh soil, and to grow rapidly. Give air freely in fine weather, so that the plants may grow stiff and strong; water with care, and see that the bottom-heat does not rise too high. When the early *Grapes* begin to colour, the house should be kept drier, and air should be admitted abundantly in fine weather; the night temperature may remain at 65°. Attend to the thinning of the berries in successional houses as soon as possible after they are set. Thin, stop, and tie down the shoots as they require it; give *Grapes* in all stages plenty of fire-heat, but be careful at the same time to give plenty of air. Let late *Vines* break naturally, but give them a little fire-heat as soon as they show bunches. The principal attention now required in the early *Peach* house is to tie down the shoots regularly, and to keep the foliage clean and healthy by frequent syringings. As soon as the “stoning” of the fruit is completed, gradually increase the temperature to about 65° by night, with a corresponding increase by day. Remove all the fruit not wanted for a crop; water inside borders, and attend to disbudding in the succession houses. Keep *Figs* in tubs and pots well watered, and syringe copiously. Increase the temperature as the season advances. Give air freely on fine days, and close up soon in

the afternoons. *Strawberry* plants in all stages should have a liberal supply of water, and those swelling their fruit require liberal doses of liquid manure two or three times a week. Plants in bloom should have abundance of air. Introduce a fresh batch of plants fortnightly for succession.—M. SAUL, *Stourton*.



BOUVARDIA JASMINIFLORA.

WE have to thank Mr. Standish for the information how to grow the beautiful little specimens of *Bouvardia jasminiflora*, which have been exhibited from the nursery of Messrs. Standish and Co., of Ascot, at the recent spring meetings of the Royal Horticultural Society. This *Bouvardia* is a charming little plant for winter decoration; its white jasmine-like flowers very much resemble those of *B. longiflora*, but the plant is more compact in habit, and much more floriferous. Such useful and pretty little specimens as that represented in the accompanying figure, borrowed from the *Gardeners' Chronicle*, are thus produced:—

Cuttings are struck in April and May, and when well rooted they are planted out in pits, in soil about 5 inches deep, consisting of leaf-mould, rotten dung,

and loam. The plants are planted 6 inches apart, and are kept topped throughout the summer, to induce a dwarf and bushy habit. About the middle of September they are taken up and potted, being kept in a close place for about ten days, in order that they may get established, after which they are stored for the winter, and brought out in succession for forcing. Small plants like that represented in the figure, are brought into flower by placing them on shelves close to the glass, in a stove, the heat of which is never allowed to fall below 70° , even at night. The atmosphere of the house is, moreover, charged with moisture, and a large quantity of ammonia is given off from a bed of dung and leaves, which occupies a plunging pit in the centre. In such a position they bloom continuously for three or four months, successional crops following on as the others are cut. *B. jasminiflora* is much to be preferred to the old *B. longiflora*, as it makes better plants, and is altogether freer both in growth and bloom.

The temperature noted above is that to which plants for flowering in December, January, and February are subjected. At other seasons, when there is an abundance of sun-heat, a much lower degree of artificial warmth suffices, and in a hot summer the plants bloom abundantly for about three months out-of-doors, if grown on for the purpose. Young plants are found to be very much preferable to old ones. The flowers are extremely useful for bouquets.—M.

FLOWER-GARDEN MANAGEMENT.—APRIL.

THE principal sowing of *Hardy Annuals* should be made as early in the month as possible; sow the seed in patches, rows, or otherwise as desired, and cover lightly with fine dry soil. After the young plants are up they should be dusted over occasionally with slaked lime, to protect them from slugs; the plants should be well thinned out, and to grow them fine, the land should be well manured and dug deeply. The main sowing of *Tender Annuals* should be made on a gentle hot-bed under a frame; as soon as the young plants are up air should be given freely, and when they are large enough to handle they should be pricked out into beds three inches apart, to get stronger before they are finally planted out into beds and borders. Sow *Biennials* and *Perennials* as early in the month as possible. Protect *Tulips* and other bulbs from frost and rough winds. Continue to plant and propagate *Hardy Perennials*. Continue to plant *Hollyhocks*, seedling *Pansies*, and roots of *Gladioli*. Attend well to the watering of newly-planted *Trees* and *Shrubs* in dry weather. Attend to the hoeing, stirring, cleaning, and dressing of beds and borders. Complete alterations as soon as possible. Attend to mowing and sweeping, and keep every part of the garden clean and neat.

IN-DOORS.—In order to prolong the fine display which the many *Hard-wooded Greenhouse plants* now make, the houses should be shaded for a few hours during bright sunshine. Give abundance of air in mild weather, but carefully guard against cold cutting winds, and attend well to the watering. The plants shifted last month will now begin to root into the fresh soil, and should have more air

admitted. Be careful in watering until the pots get fuller of roots ; an occasional syringing in bright weather will be beneficial to them. Young plants intended to make large specimens should have the flower-buds picked off as they appear, to induce them to make fresh growth. Attend to the training and tying-out of the plants, and continue to shift any that may require it. *Soft-wooded Greenhouse plants* will now be making rapid growth, and should be encouraged to do so. Attend well to the watering, and shift all plants when they require it. *Pelargoniums* will now demand some attention ; keep them near the glass, and fumigate occasionally to keep down the green-fly ; give them liberal supplies of water. Plants advancing into bloom will be benefited by an occasional dose of liquid manure. Shift plants intended for late blooming. Continue to shift *Fuchsias* as they require it, and attend to the stopping and tying of the shoots. Attend well to the watering of *Liliums*, *Cinerarias*, and *Primulas*. Sow some seed of *Cineraria* and *Primula* for autumn flowering. Continue to pot off spring-struck cuttings, tender annuals, and other plants in pits and frames.—M. SAUL, *Stourton*.

SEASONABLE HINTS ABOUT AURICULAS.

THESE plants will, during the month of April, claim our particular care and attention. They will now have made great progress, and most of the trusses will have risen out of the hearts. Many of these will require to be thinned, which should be done as soon as the pips are sufficiently forward. In performing this operation, all ill-shaped pips, such as are likely to disfigure the symmetry of the truss, must be cut away. Keep the plants properly watered, and give them plenty of air when the weather is congenial, for the more light and air they have, the stronger and more healthy will be the bloom. Cold frosty winds should be avoided, and should the nights be frosty the frames should be well covered. Auriculas should be placed in an east aspect until they begin to come into bloom, so that the plants may have the benefit of the morning sun. A slight shading will be necessary for a few hours during the middle of the day if the sun is shining powerfully. As soon as the pips begin to expand they should be removed to a north aspect, where they should remain during the time they are in bloom. Secure the stems with small sticks, and get the trusses in an erect position ; keep them shaded from the sun, and should the weather be hot and dry, frequently water the ground outside the frame. This will allay the dust and keep them cool, and do much to prolong the bloom.—JOHN BALL, *Slough*.

GARDEN GOSSIP.

IN a communication to a contemporary, Mr. Rivers states that the *Pyrus spectabilis roseo-plena*, which we recently figured, is the same as the *Pyrus spectabilis Riversii*, raised many years ago at the Sawbridgeworth Nursery. If it be so, we can only express surprise that we should have heard so little of so beautiful a plant. Mr. Rivers states that his tree was raised from *P. spectabilis* crossed with *P. japonica*, that it gave darker flowers and a more robust habit, and though apparently

distinct, did not seem novel enough to make it a lion. This expression scarcely conveys an idea of the extreme beauty of the plant we figured, and one can hardly imagine so fine a subject being allowed to sink into oblivion in an establishment so noted for hardy trees as that at Sawbridgeworth. A comparison of specimens at the flowering season would, however, set the question at rest.

— UNDER the name of *Philageria Veitchii*, Dr. Masters has recently described a remarkable hybrid raised by Messrs. Veitch and Sons, between *Lapageria rosea* and *Philesia buxifolia*, the latter being the pollen parent. This plant is the more interesting, as hybrids between two genera are very uncommon. Messrs. Veitch's plant is a scrambling shrub, with slender, cylindrical, flexuose, rigid, smooth, wiry branches, having alternate, petiolate, oblong-lanceolate, pointed leaves, about $1\frac{1}{4}$ in. long by $\frac{1}{2}$ in. broad, leathery, smooth, and dark shining green above, paler and marked by three prominent converging ribs below, and with a cartilaginous very finely serrulated edge. The flower-stalks are axillary, and bear numerous overlapping, ovate concave, glabrous bracts; and the flower is solitary, pendulous, with a calyx of three fleshy, glaucous, pale rosy-purple, oblong-lanceolate, boat-shaped sepals, and a corolla of an equal number of fleshy, bright, rose-coloured petals, which are slightly unequal in size, overlapping, broadly ovate-acute, with a circular honey pore on the inner surface at the base. The stamens are six in number, free, hypogynous, or attached at the very base of the segments of the perianth, a little shorter than the petals; the filaments fleshy, subulate, spotted with pink; and the anthers yellow, linear-oblong, tubular at the base, so that the extremity of the filament is concealed at its point of insertion by a kind of sheath. The ovary is 1-celled, with three parietal placentæ, and the numerous ovules are anatropal.

— M. BERT, desiring to test the *Effect of Green Light on the Sensitive Plant* (*Mimosa pudica*), placed several examples under bell-glasses of different-coloured glass, and set them in a warm greenhouse. At the end of a few hours a difference was apparent; those which had been subjected to green, yellow, or red light having the petioles erect, and the leaflets expanded; while those under blue and violet glass had their petioles almost horizontal, and the leaflets hanging down; those under blackened glass were less sensitive in a week, and in twelve days were either dead or dying. At that time those under green glass were entirely insensitive, and in four days more were dead, the plants under the other glasses being perfectly healthy and sensitive, but unequally so. The white had made great progress, the red less, the yellow a little less still, whilst the violet and the blue did not appear to have grown at all. After sixteen days, the vigorous plants from the uncoloured bell-glasses were moved to the green; in eight days they had become less sensitive; in two more the sensitiveness had almost entirely disappeared; and in another week they were all dead. From these experiments, it would appear that green rays of light have no greater influence on vegetation than complete absence of light.

Obituary.

— MR. THOMAS INGRAM died on March 9th, at Upton Lodge, Slough, at the ripe age of 76. He was in charge of the Royal Gardens at Windsor for upwards of 50 years, and was the trusted and faithful servant of four of our Monarchs, having entered the Royal service as head gardener to Queen Charlotte in 1816. In 1833 he was appointed by William IV. to the superintendence of the whole of the Royal gardens then scattered about the parks at Windsor; and during the reign of Her Majesty he formed the present magnificent gardens at Frogmore. Mr. Ingram devoted much attention to the development and improvement of our useful and ornamental plants, and in this way his name is honourably associated with Melons, Strawberries, Pears, Apples, Cherries, and Plums, amongst fruit; and, amongst other things, with Roses, Pelargoniums, and Begonias, amongst flowers. In 1865 he was presented by his horticultural and personal friends with a handsome testimonial, the subscriptions to which amounted to £230.

— MR. WILLIAM OSBORN, of the Fulham Nursery, died somewhat suddenly on March 7th. He was the elder brother of Mr. T. Osborn, whose death we had the sorrowful duty of announcing but a few weeks since. Few names connected with commercial horticulture have been held in such esteem and regard as those of Mr. Robert Osborn, who died about four years since at an advanced age, and of his sons, who have now, within a few weeks of each other, been taken from amongst us.




J.L. Macfarlane Del et. Zinco.

F. Waller Imp.

PELARGONIUM.
1. Pompey 2. Achievement.

SHOW PELARGONIUMS.

WITH AN ILLUSTRATION.

E have to thank Mr. Turner, of Slough, for the opportunity of figuring the two fine varieties of Show Pelargoniums which Mr. Macfarlane has so well depicted in the accompanying plate. They were shown on various occasions during the past summer, and were everywhere highly spoken of; both, moreover, when exhibited, winning first-class certificates. Fig. 1, POMPEY, is an exceedingly rich, high-coloured flower; and fig. 2, ACHIEVEMENT, is remarkable for the softness and distinctness of its rosy tint. We add some very apposite remarks relating to these exceedingly beautiful flowers, with which we have been favoured by Mr. Ball, of the Slough Nursery:—

“These noble flowers do not, from some unaccountable and totally undeserved reason, seem to hold the high position at our Exhibitions which they did a few years back. This is much to be regretted, as when properly grown, they are second to none as exhibition plants. In addition to their attractiveness and variety, they so well repay the care bestowed upon them; and there are but few who have not, at some period or other, been delighted with the beauty of well-grown specimens—so perfect in shape, and so gorgeous in colour. Indeed such deserving favourites must not be allowed to sink in public estimation without an energetic effort on the part of all true lovers of Floriculture to prevent it; for whether we consider their comparatively easy culture, their brilliancy and diversity of colour, their symmetry of form, or their purity, we can but arrive at one conclusion, that the show Pelargonium could not be replaced by any other flower which would yield the same effect. If any subject has been brought near to perfection, it is the Pelargonium; for there is scarcely another florists' flower that will bear such a minute critical examination in regard to its points of excellence without some defect being found; indeed it seems almost impossible that the existing varieties can be improved on. It must be very gratifying to the raisers of novelties—Mr. Hoyle and Mr. Foster among the show varieties, and Mr. Turner among the fancies—to see the high excellence which has been attained, principally through their exertions. In the hope that we may once more see the Pelargonium occupying a prominent position at our exhibitions, I append a list of some of the best varieties in each class, such as from their dissimilarity, good form, and brightness of hue will be found acquisitions in any collection.”

SHOW VARIETIES.

Achievement (Foster).—A pleasing, large, light variety of great merit; lilac-rose flower-petals, maroon spot on top, large white centre; very dissimilar.

Cæsar (Foster).—Rich crimson; fine bright lower petals, painted, top petals dark maroon, with narrow fiery crimson edge.

Pompey (Foster).—A very large flower, of rich colour and fine form; orange lower petals, maroon top, with orange margin; large white eye.

Rosicrucian (Hoyle).—New shade of colour; rosy purple, maroon spot on top petals, shaded with purple; fine form.

Claribel (Hoyle).—The purest white, with small spot of bright earmine on top petals; a lovely flower, and quite distinct.

Emperor (Foster).—Light fawn-pink, with maroon spot on top petals, orange-pink margin, large white eye; fine shape and very free.

Prime Minister (Foster).—Crimson lower petals, maroon top, shaded lilac margin, clear white eye.

Magnificent (Hoyle).—Deep lilac-rose, with black top petals, rose edge, white centre; large and fine.

May Day (Foster).—Lower petals soft pink, black spot on top petals, with orange shade, large white eye.

Prelate (Foster).—Lower petals dark purple-maroon, black top petals, narrow purple margin, white eye; fine substance.

Charles Turner (Hoyle).—Scarlet, with a pure white centre, lower petals of perfect shape, upper petals scarlet-orange, with shaded maroon spot; very fine.

Brigand (Foster).—Clear cherry-pink, with maroon spot on top petals, shaded to the margin with orange-pink, clear white eye; fine.

Black Prince (Foster).—Large clear white eye, lower petals rosy crimson, top petals black, with edge of bright earmine; fine.

Imperator (Hoyle).—A rich, dark flower of fine form and substance, lower petals deep crimson, black top, narrow crimson edge.

Hermit (Foster).—Lower petals light rose, with mottled maroon spot on the top petals, very light edges, large white centre; large, fine, and free.

Maid of Honour (Foster).—Light rosy pink, small dark maroon blotch on the top petals, shaded off with orange, large white centre; large and fine.

Brigantine (Foster).—Lower petals rosy purple, top petals dark maroon, narrow lilac margin, clear white eye; dwarf habit, and very free.

Troubadour (Foster).—Lively orange-pink, of a new shade, medium maroon spot on top petals, shaded with bright orange, large white centre.

Pollie (Foster).—A novel flower; deep rich glossy crimson, very effective, black spot on upper petals.

Duke of Edinburgh (Hoyle).—A dark, rich flower, with deep crimson lower petals, veined with maroon, black top petals; large and free.

Progress (Hoyle).—Light centre, lower petals orange-red, richly marked with dark red, top petals very rich velvety maroon, earmine margin; fine.

Sultana (Foster).—Lower petals rosy purple, top petals finely marked with black, narrow lilac margin, clear white centre; very free.

Warrior (Foster).—A bright, fine flower, rich glossy crimson, black spot on upper petals, with margin of scarlet-lake.

Rob Roy (Foster).—Rosy purple lower petals, top petals black, with purple edge, clear white eye.

FANCY VARIETIES.

Brightness (Turner).—Deep, rosy crimson, clear white centre and edges.

Edgar (Turner).—Dark maroon, nearly black, with a light throat.

Ellen Beck (Turner).—Delicate lilac-earmine, with bright throat and edges; very free.

Agrippa (Turner).—White, with large pale lilac spot on top petals.

Mirella (Turner).—Vivid rosy lilac, light throat and edges; free bloomer.

Pink of Perfection (Turner).—Pink, of a pleasing new shade, light centre.

Marmion (Turner).—Rich crimson top petals, shaded with purple, clear white eye, very narrow edge; large.

Acme (Turner).—Purple-maroon, white throat and margin; good form and habit.

Fanny Gair (Turner).—Rosy lake suffused with purple, clear white centre and edges, fine form and substance; very fine.

Lady Carrington (Turner).—Soft pale peach, top petals suffused with pale pink.

Mrs. Dorling (Turner).—Beautiful mottled lilac, white throat and edges; fine form.

Vivandière (Turner).—Rich crimson, very free and striking.

Miss in Her Teens (Turner).—Crisp upper petals, under petals mottled crimson.

Formosa (Turner).—Rosy lake, shaded with lilac, clear white centre and edges; fine form.

Mrs. Ford (Turner).—Lilac, margined with white, lower petals suffused lilac.

Cloth of Silver (Henderson).—White, with delicate rose blotch.

Leotard (Turner).—Bright cherry-rose, with clear white centre and edge, very smooth, and of great substance.

Princess Teck (Turner).—White, with earmine spots, very smooth; a most profuse bloomer.

ROSES AND ROSE-CULTURE.

CHAPTER XI.—THE ROSETUM.

“**I** HAVE never yet,” says a clever friend, in a letter recently received, “I have never yet seen a Rose-garden which altogether pleases me, although I have seen a great many which displease me.” I cordially concur in this opinion, but scarcely think it necessary to enlarge upon it; better certainly it is to show the desirable, than to lavish words on the undesirable.

In the first place, let me say, that special knowledge—a wide and correct knowledge—of Roses, is required in order to work out a complete and effective Rose-garden. The knowledge of the mere exhibitor, valuable as it is in enabling him to fatten the flower, and to distinguish one variety from another, fails lamentably when trusted to arrange and plant a Rose-garden, where a wide and complete knowledge of the nature, habits, and capabilities of the different groups and varieties is necessary. If the amateur who aims at a satisfactory Rose-garden does not possess this wide knowledge, he should submit his plans to some one who does, vesting in him alike the power to follow out and act upon this knowledge, and the responsibility of the issue. This is my idea:—On a given space of lawn, place a series of beds of different sizes. Let them be sufficiently distant from each other to admit of the introduction of single specimens of pillar and creeping roses, and also single specimens of evergreens. If the soil be of a suitable nature, or if such a soil (light loam or peat) be readily accessible, nothing can be in better taste than single plants of Rhododendrons. Under other circumstances, Junipers and various moderate-growing evergreens may take their place. Roses, as a rule, especially when the plants grow old, are deficient in foliage, consequently a Rose-garden should be interspersed with specimens or groups of evergreens, and freely supported at the circumference by the same. Here also may be introduced avenues of Pillar Roses or arcades of Climbing Roses, beautiful features in the Rose-garden when so placed as not to mar or obscure the general effect. Returning to the interior, the groups and specimens of evergreens should be of various forms and shades of green, to prevent monotony, and should be so disposed as to heighten the effect by the agreeable contrast they present to the dominating colour (red) in roses. The edgings of Rose-gardens may, under some circumstances (by the side of gravel walks), be of white flint, the interstices being filled with stone-crop, by which arrangement are introduced two colours (yellow and white) deficient among roses. Ivy is also a good margin for gravel walks. But when the beds are on grass no edging is required—none admissible indeed, unless it be one of very dwarf roses, such as the Miniature Provence or Lawrenceana.

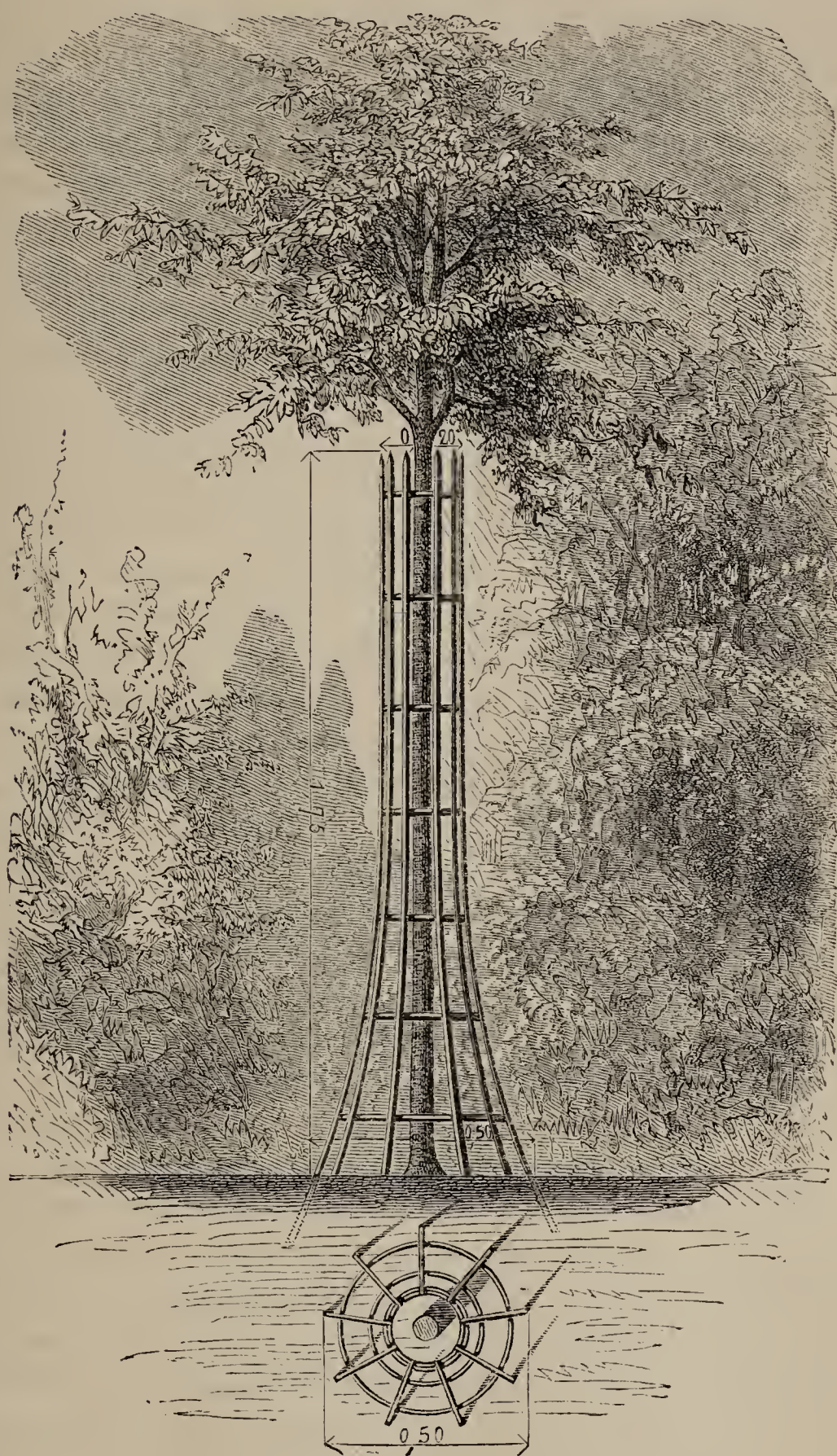
In forming a Rose-garden, the different groups of Roses may be used with most effect in the following proportions:—Gallica or French, 1; Moss and Provence, 2; Damask and Alba, 1; Hybrid and Bourbon Perpetual, 6; Austrian, 2; Sempervirens, Ayrshire, and Multiflora, 1; Hybrid China and Hybrid Bourbon,

2; Noisette, Tea-Scented, and China, 2; Bourbon, 1. In the South or West of England, and anywhere where the soil is dry, and the climate mild, a larger proportion of the Noisette and Tea-scented should be used. The Sem-pervirens, Ayrshire, Multiflora, and Hybrid China, may be trained chiefly as climbing, pillar, and weeping roses, where summer roses are sufficient; where autumnals are required, the strong-growing varieties of the Hybrid Perpetual, Noisette, and Tea-scented, are suitable for the same purposes.

But how shall these Roses be grown? The strong growers are best as standards, climbers, or pillars; the moderate growers as half-standards, and the small growers as dwarf standards or dwarfs. And how shall they be disposed of? The centres of some of the beds should be occupied with standards, gradually decreasing in height and merging into dwarfs at the circumference. Other beds should be filled with dwarfs only, so that the surface of the ground may appear uneven and varied. Again, in some beds the colours may be judiciously mixed, *bringing together kinds of similar habit, and which bloom at the same time*; other beds may be planted entirely with one sort. Too much pains can hardly be bestowed on the choice of sorts, for on this depends mainly the effect of the whole. Nothing definite can be said under this head, unless the plan about to be executed were taken into account. It has been too much the custom in the past to gather together into square or long beds large quantities of plants, resting satisfied with the effect of large masses of flower. For this purpose the summer roses are admirable, perhaps unequalled. But this is only one of the many features of beauty that may be realized in the Rose-garden, and those who are satisfied with this are satisfied with very little. So rich and varied are the materials which nature and art together have placed at our command here, that we may go on successfully piling up feature upon feature of surpassing beauty. Rose-beds, rose groups, rose banks, rose arcades, rose temples, rose avenues, rose hedges, rose dingles, &c., may be made complete in themselves, and so wrought into one harmonious whole as to form a beautiful Rose-garden. With regard to the shapes and sizes of the beds, these must be adapted to the size and character of the space of ground about to be occupied. Exact instructions on this point that would be even generally available can hardly be given. It may, however, be said that beds with narrow points should be avoided; straight lines are not often objectionable, but circles and variations of the circle should be most freely used.

Every Rose-garden should have an elevated spot in the vicinity from which one may look down on and command a complete view of the plants. In looking *up* at a Rose one sees the least finished part, the back of the flower and the back of the leaves; but in looking *down* both are met in face.

As Roses suffer from both wind and frost, it is well if the Rose-garden can be surrounded at some little distance with a belt of evergreens. The tone of green in the common laurel is pleasing in contrast with most roses, and where this evergreen grows well and fast, nothing can be better for the purpose.—WM. PAUL, *Paul's Nurseries, Waltham Cross, N.*



PARISIAN TREE GUARDS.

AVENUES of trees form one of the special features of adornment in and about Paris, and it naturally follows that the best means of protecting their stems from injury is an important consideration in the eyes of the authorities. Through the courtesy of the publisher of *Les Promenades de Paris*, we are able to give the accompanying figure of the Tree Guard generally adopted for this purpose, and which, while it is particularly elegant and appropriate in character, is found to be in every way effective. The con-

trivance needs little explanation, since the figure gives a very complete idea of its construction. There are nine uprights, about 6 ft. high, which are curved outwards at the base, and are united by seven wooden hoops attached by means of iron wire. The width of the base of the guard is about 20 inches. These guards efficiently protect both the stem of the tree and its root-base.

The average cost of planting avenue trees in Paris is set down in the sumptuous work above referred to, at 16fr. 50c., or about 13s. 2d. sterling, distributed thus:—For the trees, 7fr. 50c.; for two square yards of vegetable soil, 5fr.; for a tree guard, 3fr. 85c.; for expenses of removal of earth and maintenance for two years, 5fr. 15c.—M.

FLOWER-GARDEN MANAGEMENT.—MAY.

ALL *Hardy Annuals* sown at the beginning of last month will have vegetated, and as soon as the young plants are large enough to handle, they should be carefully thinned; they should be dusted occasionally with quick-lime to protect them from slugs; make another sowing for autumn flowering. Towards the end of the month commence planting out *Tender Annuals* and *Perennials* in beds and mixed borders. Plant out rooted runners of *Neapolitan*, *Russian*, and *Tree Violets* in beds, previously prepared, at about ten inches apart. Stir the soil between *Pinks* and *Carnations*, and tie up the stems carefully to stakes as they lengthen. Divide *Polyanthuses*, and plant them in a cool shady part of the garden. The different kinds of *Double Wallflower*, *Iberis*, *Alyssum*, *Arabis*, *Phlox*, &c., may now be propagated under hand-glasses in a shaded situation. If showery weather should occur about the middle of the month, advantage should be taken of it to commence planting out the summer *Bedding stock*; begin with the hardier sorts, as *Calceolarias*, *Verbenas*, &c., leaving such things as are liable to suffer from cold until towards the end of the month. But if the weather continues mild, get as many things out as early as possible, so as not to have all to do towards the end of this or beginning of next month; generally, most things, if properly hardened off, may be planted out after the twentieth of the month. Plant deeply, and then the roots will soon strike down deeply, if there be proper depth of soil, and will not need so much watering should dry weather set in. When the planting is completed, rake all beds and borders, to give a tidy, neat appearance. Keep grass and gravel walks in good order, by mowing the grass weekly, and frequently sweeping the gravel when dry, and rolling it after rain.

IN-DOORS.—Whilst the finer kinds of *Hard-wooded Greenhouse Plants* are in flower continue to shade the house during bright sunshine. As the plants go out of bloom, attend to picking off the seed-vessels, which if allowed to remain on long after the plants have done blooming, are very injurious. Great attention should at this season be paid to watering. Many of the young plants that were potted in March will now be beginning to grow freely, and should be trained in the form decided on; the fewer stakes used for this purpose the better, and almost

daily attention will be required in stopping and tying out the shoots. Shift all plants that require it; in potting be careful to press the soil firmly between the ball and the sides of the pot. Continue to shift *Soft-wooded Plants* as they require it. Show and Fancy *Pelargoniums* now coming into bloom will require liberal supplies of water; keep them near the glass, give them plenty of room and air in mild weather, and keep them clear of green-fly. *Zonal Pelargoniums*, should be potted and attended to. Continue to shift *Fuchsias* for autumn blooming. Prick off seedling *Cinerarias* and *Primulas*, &c., as soon as they are large enough to handle. As the pots and frames become emptied of their winter occupants, they will come in for the growth of *Balsams*, *Cockscombs*, and other tender annuals.—M. SAUL, *Stourton*.

NEW SWEET-SCENTED LARGE-FLOWERED CLEMATIS.

VERY few indeed of our popular favourites can boast of such an advance as has been made within the last ten years by the *Clematis*, as a garden flower. Picturesque in habit, its chief use, up to that period, had been, as a vigorous-growing climber, to form screens for shutting out unsightly objects; and except in the case of the hawthorn-scented *C. Flammula*, popularly known as the sweet-scented Virgin's Bower, an old garden favourite, and *C. patens*, introduced in the fourth, and *C. lanuginosa* in the sixth decade of the present century, they were but lightly esteemed. The acquisition of these, and of *C. Fortunei* and *C. Standishii* some ten years ago, has, however, led to a remarkable extension of the variety they afford, and also to a wonderful improvement in their quality and adaptation to general purposes of decoration—witness the fine hybrid varieties we have figured in the FLORIST alone. The enthusiasm consequent on this improvement has now reached to such a height, that an extensively illustrated popular treatise on this noble flower has been projected, and will shortly be issued.

We do not, however, propose at present to deal further with modern varieties, than to notice the most recent acquisition, that of a well-marked fragrance, which will add greatly to the interest attaching to those amongst them which possess it, and which has been developed among the recent varieties of the spring-flowering group, typified by *C. patens*, all of them, from their early-flowering habit, forming splendid climbers for conservatory culture. This fine group of new scented varieties has been bred between *C. Standishii*, *C. Fortunei*, and some of the best forms of *C. patens*, by Messrs. George Jackman and Son, of Woking, and we have had the pleasure of leisurely inspecting and noting their qualities during the present season. The fragrance was first detected in cut flowers which had been sent by post, for critical examination; and it was afterwards discovered that all the forms of this particular type, in this batch of seedlings, were odoriferous. The odour varied somewhat in character and intensity in the different varieties, but was suggestive of a combination of those of the violet and primrose, that of one or the other of these flowers preponderating. The following are the new varieties in question:—

C. Fair Rosamond; a blush white, having a wine-red bar on each sepal, and purplish-red stamens, white only at the very base of the filaments. In this variety the violet-like odour is most strongly developed.

C. Edith Jackman; a charmingly-tinted blush white, in which the red bar is deeply coloured and more clearly defined than in *Fair Rosamond*; also violet-scented.

C. Maiden's Blush; blush white, with a red bar, paler than in the preceding, the colouring being mostly developed towards the base of the sepals; this also is violet-scented.

C. The Queen; a delicate mauve-lilac, which, from the colour and fullness of outline in its flowers, and its broad leaflets, is strongly suggestive of a spring-blooming *lanuginosa*; in this the blossoms are distinctly primrose-scented.

C. Vesta; a pure white, having the sepals marked by a cream-coloured bar, very beautiful; also primrose-scented.

C. Stella; a deep mauve, with a reddish plum-coloured bar in the centre of each sepal; also primrose-scented.

This batch of seedlings was the result of intercrossing *C. patens* (*azurea grandiflora*), *Fortunei*, and *Standishii*, with the finest varieties of the *C. Jackmanni* strain. Their fragrance is probably derived from *C. Fortunei*, in which a delicate perfume is found. They are all exceedingly beautiful, and belong to the cultural section of which *C. patens* is regarded as the type. In the same batch occurred a variety with large pale green flowers, named *C. Unique*, a striking curiosity, but its flowers are scentless, and it belongs rather to the *florida* than to the *patens* section.—T. M.

PROTECTING BROCCOLI IN WINTER.

USED to believe in the laying down or covering Broccoli as a means of carrying it safely through the winter. It was either taken up, and buried up to the neck, and all its heads turned to the North Pole, or laid prostrate in the following manner. Either way, a good deal of stress was laid upon the crown, like the mariner's compass, pointing north. This hindered the warm gleams of the winter sun from suddenly thawing the frozen heads, and thus helped them to pass through severe weather in safety. The partial laying was effected thus:—The first plant or two at the north end of the rows were taken up to make room. Then a spadeful of earth was taken out close to the stem of the upstanding plant, and laid on the north side of it, as a pillow for its head to rest on. The spade was then put in to the handle about six inches in advance of the same plant, and by a sudden jerk the Broccoli was laid down on its side. A spadeful of earth was again removed from the next plant, to cover the stem of the prostrate one up to the leaves, and the next plant was laid down as the other, and so on to the end of the row, and each row in succession.

Now there can be no doubt that either mode of laying helps the plants to bear the frost better, at least as long as they remain prostrate. The cold could not very well reach the heads sideways through the mass of leaves. The plants likewise sheltered each other, and, moreover, the stalks were protected by a thick coating of earth; further, the violent check emptied the plants to a great extent of watery sap. The supply of food was cut off, and possibly the plants also lost somewhat by bleeding. It is certain that they lost much more by evaporation than the mutilated roots could balance by their feeble absorption, therefore there

was little sap left in the plants for the frost to lay hold of. The melted, withered outside leaves proved also good protectors.

So far the case is strong in favour of laying Broccoli. What, then, are the drawbacks to this mode of enabling the plants to resist the frost? Mainly these two. Many of the plants would insist upon lifting up their heads afresh, to see what the matter could be; and, oftener still, the laying crippled the plants so much as to seriously lessen the size and lower the quality of the crowns. The plants were carried through the winter assuredly, but they were of comparatively little use when the spring came. And if layered too soon, and thus affected by such weather as we had last January or February, the heads were often erect again before March came, with its stinging frosts, which often wrecked all the fair prospects of the Broccoli with its harsh severity. And it is a fact well known to all cultivators that Broccoli is safer not laid at all, than laid too soon. The change of position as it rises again opens, as it were, the joints of its armour, and makes a clear path between the newly arranged leaves for the sharp arrows of the frost to enter in and pierce it to the heart, producing immediate mortification or sudden putrefaction.

For such reasons as these, I have left off the practice of laying down Broccoli. Taking an average of seasons, as great a weight may generally be cut by leaving it alone. Possibly a good many may be frost-cut, but those that escape are so much finer and better. Neither need we leave them to the tender mercy of the frost if we do not lay them down. It is quite possible to protect them where and as they stand. The best material for this purpose is dry asparagus-tops. Light, clean, feathery, they resist with marvellous power the severity of the frost, whilst retaining no moisture. They should be cut and dried before they are dead-ripe, otherwise they are very brittle, and easily broken. A week or a fortnight's difference in the time of cutting gives them toughness and endurance enough for sheltering Broccoli-crowns. I have found nothing so efficient; and, besides, this employment of the dead tops of one vegetable for the shelter of another, almost equally valuable, is a pleasing illustration of mutual help.

Nothing can be more simple than our mode of using them. Towards the end of October the tops are simply laid on, and stood up among or against the plants. The twiggy of the asparagus stems keeps them in position, they lay hold of the crowns on all sides, and it takes a very high wind to displace them; they afford no resting-place for moisture, and the tiny leaves are nearly always dry. Their slenderness also keeps them in motion, which adds to their power of keeping the frost off the crowns that they wave over. They are not even unsightly, they make no litter, nor leave any flavour on the Broccoli. The nearest approach to asparagus tops in effectiveness are the dry fronds of the common brake, but even these present a more bulky front to the wind, and are apt to be blown off, unless, indeed, your readers agree to serve their Broccoli as we do most of our roses,—thrust a few dry fern fronds into or over each crown, and tie it on, as our forefathers often did their nightcaps. And a very efficient winter

cap this bracken makes, either for Roses or Broccoli. But the asparagus is the best of all, and if carefully husbanded, most gardens produce a sufficiency wherewith to carry the stock of Broccoli with tolerable safety through the winter.—D. T. FISH, *Hardwicke*.

ON PIPPINS.

THE origin of this name, which is given to a large section of apples, seems somewhat obscure, though in all probability it is derived from *pip*, a spot, and refers to the pips or dots upon the skin of the fruit. Another explanation is given, namely, that pippins were so named from the trees being raised from pips or seeds; but if so, why are other kinds of apples from ungrafted trees not called pippins? Besides, they were named thus, from grafted trees, even in Shakespeare's time; for the great poet says, "We will eat last year's pippins of my own grafting." Perhaps they were golden ones, great favourites in his day, and were dotted with dark specks. These specks vary both in colour and size, according to the different kinds of apples, though they are less perceptible on russets.

Pears deserve a passing notice, for they are also dotted like apples. It is difficult to explain the cause or utility of these marks. Doubtless the specks are not connected with blight or mildew. It has sometimes occurred to me that they may be the outside pores of the fruit, while the inner parts or receptacles of the seeds breathe through the vents of their crowns or eyes, and that, when ripe, fruit give out their odours by the same pores. These suggestions seem at least to accord with the experience of phytologists, that the leaves of plants are provided with *stomata* or mouths, through which exhalation takes place.—J. WIGHTON, *Cossey Park*.

CONING OF WELLINGTONIA AND OTHER CONIFERS.

AS the *Wellingtonia* really seeded in this country, and have young plants been raised from home-grown seeds? Together with many other inquirers, I should like to know. Many have been the reports of its cone-production since I first recorded it years ago, in the FLORIST AND POMOLOGIST. At the same time, I have not seen any account since my own, about the year 1866 or 1867, of the production of male catkins,—the first I ever saw, and which I at once made use of to fertilize some female cones. The effect of this was very soon observable, the fertilized cones rapidly swelling and growing away from all those which surrounded them, and which had not been fertilized. Seed was formed and was saved, and sown by me on a border at Bicton in the spring of 1869, adjoining a large number of fine new Conifers, thousands of which I had raised during the preceding years, and bedded out in the nursery, afterwards planting them out in the plantations, where they are now to be seen of various ages and heights.

The two first seedlings I raised of that splendid conifer *Abies Douglasii* were above 60 ft. in height in the year 1868, and they had for years themselves produced cones. The *Abies Douglasii* was thus raised by thousands year after year, as

was also *Abies Menziesii*. Of *Picea cephalonica* too, I have raised thousands, and many of the early seedlings are noble trees about the park clumps, and have themselves produced cones years ago; the same may be said of *Picea nobilis* and *Picea Nordmanniana*, which were raised in great numbers, and are to be seen planted in various localities about the estate. Many of the first seedlings I raised of *Pinus insignis* are now trees of from 30 ft. to 50 ft. high, and have themselves produced cones long since. I also raised several fine batches of *Pinus excelsa* and other varieties, and planted them out; also of *Cryptomeria japonica*, &c.; in fact, the nursery contained thousands of various healthy conifers.—JAMES BARNES, *Exmouth*.

[We understand that *Sciadopitys verticillata* is this year coning at Knaphill.]

FLOWERS FOR CHURCH DECORATION.

THE use of flowers in churches has become very general, either on special occasions, or, in many instances, on each Sunday. In large cities especially, it is very desirable to continue this practice, for it gives many of the congregation an opportunity to see flowers, which they would not have without visiting a good garden in the country. In this country, where the service is, in many instances, performed from a reading stand or table instead of a pulpit, there is frequently a large vase of flowers placed on the stand: in other cases, two or more vases on the communion-table.

With this preface I intend to mention a few of the flowers which are found best adapted for the purpose, under the two heads of winter and summer flowers. They might indeed be called outside and in-door flowers, as after the middle of May, and thence until the end of September, there is an abundance of outside flowers and foliage suitable for the purpose. And as a large vase of flowers without foliage would be in very bad taste, I will also mention the foliage we use at each season, commencing with the winter.

Of flowers it is necessary to have some good bold flowers of decided colours, or pure white. One of the best, much in demand at Easter especially, is the old *Richardia aethiopica*, and *Eucharis grandiflora* is prized at all times. *Poinsettia* and *Euphorbia jacquiniæflora* are good; *Zygopetalum crinitum* is fine; a few good stems of *Tuberose* are also useful in the winter, on account of their sweetness; white and red *Carnations*; white and red *Bouvardias* for smaller subjects, with *Heliotrope* and *Stevia* for scent and light graceful flowers. A few extra fine *Chrysanthemums* of a clear white may be used, but other colours look common. *Passiflora princeps*, both flowers and shoots, are fine to hang down, with shoots of *Cissus discolor*, and flowers of *Begonia Sandersii* and *B. insignis*.

For foliage we use shoots of *Canna*, or leaves of *Richardia* and *Eucharis*. Shoots of *Abutilon Thompsoni* are fine, especially by candle-light. Fronds of *Cibotium Barometz*, *Polypodium aureum*, *Dicksonia antarctica*, and several varieties of *Pteris*, also the flower-shoots and leaves of *Maranta Veitchii* and the *M. Warscewiczii* are splendid; the white flowers of the latter, with good leaves on the stems, are magnificent. A good shoot of *Arundo Donax versicolor* is also fine

for this purpose; and the long flower-spikes of *Cymbidium aloifolium* are fine as drooping objects, with the *Passiflora*, &c.

For summer, nothing is so useful as the *Lilies* and *Gladioli*. *Lilium longiflorum* is splendid for the purpose; also the new white Japan *Lily*, and an occasional flower of *L. auratum*; with *Canna* shoots, large hardy *Fern* fronds, shoots of *Humea*, and any graceful foliage which will last for the day without drooping.

Roses are always desirable, and are used here at all seasons, but as they do not mix well with other flowers and foliage, they are generally used in small vases alone, or with a few other choice small flowers, often with a small bunch of *Violets* or *Lily of the Valley* for the scent.

As these flowers have generally to be cut on the Saturday morning, and often to be sent to a distance—with, perhaps, in the winter, the thermometer at zero, and in the summer at tropical heat—it is necessary to learn what flowers will last in a fresh condition for the greatest length of time; and as there is generally in the congregation a lady volunteer who takes pride in her floral arrangements, which are generally in good taste, the flowers are for the most part set up to the best advantage.—JAMES TAPLIN, *South Amboy, New Jersey, U.S.A.*



DAVALLIA PARVULA.

THIS remarkably interesting miniature basket-fern was found by Mr. Thomas Lobb in Borneo, and was by him introduced to the collection of Messrs. Veitch and Sons, by whom it was distributed some three or four years since. It is, as the accompanying figure shows, of creeping habit, the slender scaly rhizome being furnished with small fronds, which are evergreen, from one to two inches high, deltoid in outline, and divided in a bipinnate or tripinnate manner, the ultimate divisions being almost filiform. The sori are placed at the sinuses of the ultimate forks of the segments.

As a basket-fern for the stove, this is one of the prettiest of recent introductions. If planted in a small wire or rustic basket, or in such a receptacle as one of the parts of a cocoa-nut shell, and a soil of light turfy peat is used, its tiny rhizomes will soon spread over it, and cover the surface with the pretty, finely-cut miniature fronds, which when they arrive at the fertile state will be found exceedingly interesting objects.—T. M.

ON CONIFERS AS ORNAMENTAL PLANTS.

It has occurred to me that it may be useful to record some observations made from time to time on some of the more popular of the Coniferous plants cultivated in this country, more in relation to their value as ornamental plants than to their ultimate intrinsic value as timber; for although it is a very laudable object to endeavour to ascertain the relative value of the different species and varieties as timber trees, yet at the same time there are many of which it may be said that it is hopeless to expect that they will be likely to form useful timber for many years—if ever, in this country—but which are yet so beautiful in themselves that they are worth every possible care and attention in cultivation as ornamental plants, either as single specimen plants on a lawn or terrace, or in combination with other plants in the mixed-shrubbery borders. The recent introductions from Japan have considerably increased this class of valuable ornamental plants. Many of them bid fair to become plants of very general utility, the slower-growing ones of humble growth for the margins of mixed borders or other situations where they are brought near to the eye, and the more robust for the background. It will be many years before they have so far developed their true characteristics as to have their proper places assigned to them in landscape gardening, yet their present beauty is such that we cannot afford to wait, but must perforce take advantage at once of that present beauty by using them largely in increasing the never-ending charms which collections of Coniferous plants so pre-eminently possess.

Take, for example, the *Thujopsis dolabrata*, of which it cannot certainly be said that it has yet developed any of its true characteristics in this country. It is described by travellers as a lofty forest tree of great grandeur of aspect; but at present its growth, as far as my experience goes, is so moderate that it will be years before it can be banished to the background, and young plants will always be in request for situations nearer the eye. One great charm which these Japanese Conifers possess is the great contrast which their foliage shows to that of our previous introductions of allied plants from other countries,—a contrast so desirable as to render them very valuable additions to our already well-stocked collections.

I, however, by no means claim for these any superiority of beauty, for in no one instance that I can recall are they more graceful in their habit of growth than many previous introductions. In illustration of this take the *Thujopsis borealis*; what can be more beautiful than its graceful and lovely appearance when the plant is developed to any size? It is difficult to describe its peculiar

charm, but to me it seems like a vast mass of small fronds of Ferns drooping gracefully outwards. I call it beautiful, in contradistinction to grand or majestic, such as one would describe a large *Araucaria imbricata* to be, but as it attains greater age and size, perhaps it will add grandeur of appearance to its other good qualities, when it will be inimitable. Its present good qualities are, however, such that it should find a place in even the choicest or smallest collection. By the way, this plant is also called *Cupressus nutkaensis*, and the question arises, and is becoming more important as varieties increase, how long is it to be before our learned writers on Coniferæ will give us a reliable catalogue, which shall possess a common nomenclature, recognised as authoritative by all. At present there are hardly two alike. One calls a plant black because, as he says, there are all the elements of blackness in it; another finds one or two elements not black, and forthwith asserts that it cannot therefore be black, but is certainly white; whilst a third comes to the front, and lays down the dictum that it has none of the elements of either black or white, and therefore must be something else. All this time we poor gardeners are expected to be well up in the knowledge of all these different designations.

I have been led into this digression partly by some remarks made by a gardener who was deploring the want of a settled nomenclature for Coniferæ, and who told me, in relation to this *Thujopsis*, that a gentleman inspecting his collection asked if he had a good specimen of *Cupressus nutkaensis*, and he unthinkingly replying in the negative, was rather taken aback by coming upon a good plant immediately afterwards, and by the inquirer exclaiming, "Why, there it is, and a nice plant, too." "No, Sir; we call that *Thujopsis borealis*." "Exactly so; but it is also *Cupressus nutkaensis*."—JOHN COX, *Redleaf*.

FRUIT CULTURE.—MAY.

THE coverings used for the protection of fruit-tree blossoms may now be removed. *Apricots* will be a light crop this season; *Peaches* and *Nectarines* are a good crop; all other crops promise well. *Peaches* and *Nectarines* now require particular attention in the disbudding, stopping and regulating of the shoots, and in preserving them from injury, so that they may complete their growth and get properly matured; for if they are injured or destroyed, either by insects or frost, the later growths seldom get properly ripened. Stop all shoots on *Apricots* not required to fill up vacant places, and search for caterpillars, which are very destructive to young fruit and foliage. Pinch off the end of the young shoots on *Pears*, *Plums*, and *Cherries* when they are a few inches long; this is better than leaving them to complete their growth, and then cutting them clean away. As soon as caterpillars appear on *Gooseberries* dust them over with some white hellebore powder; this will destroy them.

IN-DOORS.—*Pine* plants in all stages will require liberal supplies of water; plants swelling off their fruit should have some liquid manure occasionally; watch the bottom heat closely, as the increasing day temperature may raise it

higher than is necessary ; 85° will always be a safe bottom-heat. The whole of the succession plants shifted in March will be ready for another shift ; the largest plants may be put into their fruiting-pots, the others should have a nice shift, but should not be over-potted ; it is a great mistake to put Pine plants into very large pots in any stage, but particularly so in the case of small plants. Give air freely in the forenoon, but also close up early in the afternoon. Give moderate heat to *Vines* ripening their fruit ; dryness and abundance of air during the day, leaving some on at night, are at that season beneficial. Attend to the thinning of the berries in the successional houses as previously directed, and thin, stop, and tie down the shoots as they require it. Muscats should have a night temperature of from 70° to 75° , but for most other sorts a night temperature of from 65° to 70° will be sufficient. Give a little air early in the morning and increase it as the temperature rises, but always close up with a little sun-heat in the afternoon. A moist atmosphere should be maintained in the early *Peach* house whilst the fruit is swelling, but when ripening begins the house should be kept dry, and plenty of air should be given. When the fruit is ripe hang nets to the trellis, to prevent them from falling to the ground. Attend to the thinning, stopping, and regulating of the shoots in the successional houses. Keep all inside borders well watered, and syringe the trees daily. *Figs* should have abundance of water given to the roots, and the foliage should be kept heavily syringed, except where there is ripe fruit ; continue to pinch off the ends of the shoots when five or six joints long ; give abundance of air. *Strawberries* will now require copious waterings ; all plants must be kept well syringed, except those in flower and those having ripe fruit, otherwise the red-spider will be difficult to keep down.—M. SAUL, *Stourton*.

THE GLADIOLUS DISEASE.

THAT the Gladiolus is more subject to be diseased in some seasons than in others, shows that it is a plant of delicate constitution, and easily affected by our cold, wet summers. From this cause, the disease was more general last year than usual, and most extensive growers had to mourn over great losses in their beds. Coming originally from a warm climate, the Gladiolus requires our warmest summers and autumns to ripen its corms properly ; and this is the cause why the Continental growers have a better chance of raising seedlings and growing them than we have. Many gardeners, however, have, in their forcing-houses or greenhouses, the means to raise a few boxes or pots of Gladiolus from seed yearly ; and in this way, after two or three years' growth, they may be able to make up all their wants in their best beds. It is astonishing that small, well-ripened corms will show fine spikes the second or third year from the seed, if pushed on with a little heat in the spring months. It is best to select a dozen of the best-shaped show varieties, and grow them in pots for seeding purposes. They can then readily be protected from the weather and bees in a greenhouse or other erection, and crossed with the view to the raising

of new sorts. No plant is more easily fertilized than the *Gladiolus*, and the seed pods swell very fast in the temperature of a greenhouse. To be successful in raising new kinds from crossing, only the very best kinds for colour, arrangement of spike, and shape of flowers must be selected. In the fine warm summer and autumn of 1869, I saved an immense quantity of good seed from *Gladioluses* grown in *Rhododendron* clumps, and what with the seeds and spawn left in the ground, thousands of young plants are springing up yearly, and will be left in the ground till they flower, which will be this year or next.

I was pleased to see, from an article in a contemporary, that Mr. Lombard, the celebrated grower of the *Gladiolus* in Ireland, had taken my view of raising them from seed yearly, on purpose to fill up the losses in his beds. We cannot afford to give up the culture of this gorgeous autumn flower, for, whether on the exhibition table or for decoration, it is unequalled.

The black spots on the corms of the *Gladiolus* are as fatal to them as the fungus specks on the foliage and tubers of the potato, and about as mysterious as to their origin. We know that potatoes of approved sorts wear out after a certain number of years' cultivation, and seedlings are raised annually to take their place—to succumb in their turn, and give place to others. May not all this, both in the *Gladiolus* and the potato, arise from the plants coming originally from a tropical climate, and from ours being too cold, and thus giving a check to their constitution, requiring a renewal of vigour by raising new varieties from seed?—WILLIAM TILLERY, *Welbeck*.

BLANDFORDIA AUREA.

IF this most interesting genus of greenhouse perennial herbs, some five or six species are or have been in our gardens, all eminently beautiful, and deserving of more extended cultivation. They belong to the Liliaceous order, and have fleshy root-stocks with stout fleshy roots; tufted, narrow, erect, or spreading leaves; and erect flower-scapes, terminating in a raceme of large funnel-shaped drooping flowers, which are generally of an orange-red colour, recalling that of their near relatives the *Tritomas* or *Kniphofias*. The larger-flowered and finer of the introduced species are:—*B. flammea*, with slightly rough-edged leaves, and distant long-stalked flowers; *B. Cunninghamii*, with entire-margined leaves, and dense umbellate heads of short-stalked flowers; and *B. aurea*, with narrower leaves, and yellow long-stalked flowers, as represented in the annexed cut. Though smaller-flowered than the foregoing, both *B. nobilis* and *B. marginata* (the latter being, according to Hooker, the true *B. grandiflora*) are also remarkably ornamental plants, the latter having a much elongated raceme of conical rather than funnel-shaped flowers.

B. aurea is a cool greenhouse perennial, of evergreen habit, with numerous narrow, grass-like, acutely-keeled leaves, somewhat rough at the edge. It throws up short racemes of bright golden-yellow flowers, which are from an inch and a half to two inches long, campanulate, slightly contracted above the base, with the limb-

segments obtuse and bluntly apiculate. We owe its introduction to our gardens to the Messrs. Veitch and Sons, of Chelsea. Like the other species, it may be



BLANDFORDIA AUREA.

grown in a compost of peat and loam, and being evergreen, requires to be kept watered all through the winter. It flowers during the summer months.—T. M.

THE COLEUS FOR TABLE DECORATION.

HERE there is a demand for pot plants for the table, I have found the varieties of *Coleus* very valuable, as they have several good qualities which other plants do not possess. One is that they are easily grown, and that in a very short time, while the variety of form and colour in their foliage are everything that could be desired for the purpose. We first prepare in the usual way as many pots (large 60s) as may be required for cuttings, using plenty of silver sand; after the pots have received a watering with a fine rose, we put six cuttings of different kinds into each pot, selecting one of the strongest growers for the centre, and putting the others near the rim; we give a good watering to settle the soil, and then put them in a cucumber or melon pit, where there is a nice moist heat. As soon as they begin to grow we pinch out their centres, and when they have made another growth and the pots are full of roots, we shift them into 32s, using some good friable loam and leaf-mould in about equal quantities, with a due admixture of silver-sand. After this shift they may be put in the propagating house or a vinery at work, on a shelf near the glass, and should be topped as often as required. There are three things of which the Coleuses are very fond, viz., heat, moisture, and shade, If a hot sun is allowed to shine on them, it robs them of the beautiful shades of colour. In one mixed pot now before me we have for the centre, *Bausei*, surrounded by *Baroness Rothschild*, *Princess Beatrice*, *Verschaffeltii*, *Her Majesty*, and *Veitchii*, Other pots are filled with other varieties. The effect of these admixtures is remarkably pleasing.

We have grown the *Achimenes* mixed in the same way, and for the same purpose, with very good effect; but they are not quite so easily managed as the *Coleus*.—WILLIAM PLESTER, *Elsenham Hall Gardens*.

NOVELTIES, ETC., AT FLOWER SHOWS.

THE leading novelty at the meeting of the Royal Horticultural Society on March 6th was the specimen of *Toxicophlœa spectabilis* (F.C.C.) shown by Mr. B. S. Williams; it is a white-flowered and fragrant greenhouse shrub from the Cape, and will be a good addition to our collections. This particular example, though tolerably well flowered, did not give such a good idea of the free-blooming property of the plant as an example I saw at Farnleigh, Dublin, the residence of Captain Coote, in August, 1869. The plant flowers at the axils of the leaves on both the two and three-year old wood; and in the case of the Farnleigh specimen, the branches had the appearance of spikes of white flowers, two and a half feet in length. *Primula (sinensis) Waltham White* (F.C.C.) was shown on this occasion in fine condition by Mr. William Paul, the pure white flowers being borne on red foot-stalks. An example of the rare *Dendrobium Cambridgeanum* set up in a group of Orchids staged by Mr. B. S. Williams, was much admired, and it was said that so good a specimen had not been seen for a

considerable time; the plant might be popularly described as a golden *D. nobile*. The delicate and beautiful *Primula nivalis* was a charming object in a group of forced spring flowers staged by Mr. T. S. Ware, of Tottenham, very small plants in pots being loaded with white blossoms. An elegant pinnate-leaved palm, called *Calamus verticillaris* (F.C.C.) came from Messrs. Rollisson and Son. In a mixed group of flowering plants staged by Messrs. Standish and Co., Royal Nursery, Ascot, were some named *Cinerarias*, representing a tricolor section of this family; the flower-heads had broad margins of purple of various shades, and next this, between it and the white base of the floret encircling the disc, a distinct ring of bright reddish magenta.

The First Spring Show of the Royal Botanic Society, on March 13th, was a remarkably pleasant and attractive exhibition, the leading features being Hyacinths, Camellias, and Cyclamens. The *Toxicophlœa* shown by Mr. B. S. Williams at South Kensington again appeared here. Two *Hyacinths*—*Lord Mayo* (F.C.C.) and *L'Ornement de Rosa* (F.C.C.) were among the novelties, both being staged by Mr. W. Paul; the former had darkly-shaded violet-purple bells, with a white throat; the latter, white bells, each floret having a thin stripe of pink running along it. *Polyanthus Princess of Wales* (F.C.C.), staged by Mr. Reid, of Twickenham, had evenly-laced flowers of good size; and *Cyclamen persicum fimbriatum* (F.C.C.), shown by Mr. Wiggins, of Isleworth, had pure white flowers strongly and elegantly fringed on the edges. *Zonal Pelargonium Velocipede* was staged by Messrs. Carter and Co.; the flowers were of a deep scarlet, and it might be described as a dark form of Lord Derby.

The Hyacinth show at South Kensington on March 20th brought together but few novelties, the leading one being the very handsome *Odontoglossum Andersonianum* (F.C.C.), staged by Mr. B. S. Williams; it had large flowers of a creamy-white colour, spotted with reddish chocolate. In addition to the fringed white Persian Cyclamen above alluded to, Mr. Wiggins had *C. p. roseum grandiflorum*, pale rose, with carmine base, distinct and good; *C. p. giganteum*, large and stout, white, slightly suffused and edged with pink, and with a crimson-purple base; and *C. p. purpureum*, lively bright rosy-purple. Of the new Hyacinths staged, the best was that produced by Mr. J. Douglas, Loxford Hall Gardens, under the name of *Prince of Wales*, but subsequently named *Yescho*; the bells were of a dark purple colour, with occasional stripes of magenta, and this, whether only accidental or really characteristic of the flower, gave it a novel appearance.

Azalea Beauty of Surrey (F.C.C.), a capital white variety, was exhibited at the Royal Horticultural Society's meeting on April 3rd. It was of good size, pure in colour, and fine in form; and to all appearance it will prove free-blooming; it will be a good companion to that fine double white variety, A. Borsig. A promising Continental variety, *Adolphe Marquiel*, was shown by Mr. C. Turner, the colour bright salmon-red, the upper segments suffused with a deeper hue. Mr. William Paul had a new Hybrid Perpetual Rose, named *Sir William Gull*, of a striking

hue of colour—shaded crimson-maroon tinged with purple; it may be set down as a very promising flower. Some seedling Cinerarias were staged by Messrs. F. and A. Smith, the most promising being *Perfection*, *Sunshine*, *Mrs. Macdonald*, *Purple King*, and *Magnifica*. A bright-looking magenta self, named *Harbinger*, came from Messrs. Dobson and Son, and appeared to be a very promising flower. One of the most striking plants exhibited was an example of *Tillandsia Lindenii* (*vera*), the flowers of a rich blue hue, and having a dark instead of the white centre usually seen on the blossoms of this plant; this came from Mr. Linden, of Brussels. The very pretty dwarf *Oncidium Cræsus* was exhibited by Messrs. Veitch and Sons; the flowers are small and of a bright yellow colour, with a black centre, and deep brown sepals and petals.

Quite a pleasant surprise was in store for the frequenters of the Exhibitions of the Royal Botanic Society at the meeting on April 10th, in the form of a group of new *Indian Azaleas* from Mr. Louis Van Houtte, of Ghent. Floral Certificates were awarded to *President Ghellinck de Walle*, semi-double, of a bright, purplish rosy hue, with profuse spotting on the upper segments; *Madame Iris Le Febvre*, bright pale red, good double flower, and free-blooming; *Dr. David Moore*, bright lilac-rose, a beautiful soft hue of colour, semi-double, the flowers large and bold; *Alice*, deeper than the last, bright purplish rose, semi-double, flowers large, and very free-blooming; *Comtesse de Beaufort*, light violet-rose, with heavy brownish crimson blotching, an attractive single variety; *Marquis of Lorne*, very bright orange-red, semi-double, bold and showy; and *John Gould Veitch*, a pale lilac-rose fancy flower, distinctly edged with white, and fringed on the edges, single, the flowers large and bold. Admiring gazers gathered about them during the afternoon, and these beautiful flowers formed one of the features of the show. The same award was made to *Rose* (*H. P.*) *Princess Beatrice*, from Mr. William Paul, colour clear blush, with a deep rose-pink centre; flowers large and very full; this makes a fine forcing variety. Other fine forcing varieties, as *Marquis de Castellane*, *Paul Néron*, *Princess Christian*, *Marquise de Mortemart*, and *Madame Decour*, being gloriously fine. Messrs. F. and A. Smith's *Azalea Beauty of Surrey* was certificated here also. A very handsome new Heath, *Erica Neitneriana*, was shown by Messrs. Rollisson and Sons, and awarded a Floral Certificate; the tube of this variety is of a bright rosy-red hue, the throat deep crimson, and the mouth white; very free and attractive.

The group of new *Azaleas* shown by Mr. L. Van Houtte at the Regent's Park was transferred to the meeting of the Royal Horticultural Society on April 17, and in addition other new varieties were staged with them. First-Class Certificates were awarded to *Sigismund Rucker*, in the way of John Gould Veitch, but smooth on the edges, and much paler in hue; *Madlle. Marie Van Houtte*, white, flaked with pink, and striped with pale red; large and slightly semi-double; *Comtesse Eugénie de Kerchove*, white striped with pale orange-red, semi-double, of good form, and very free-blooming, a useful market flower; and *John Gould*

Veitch. Quite a miniature variety of common Ivy was shown by Messrs. Ivery and Son, Dorking, under the name of *Hedera conglomerata* (F.C.C.), very distinct indeed in character, and said by the Messrs. Ivery to be very useful for planting

ROCKS IN THE STREAM NEAR LONGCHAMPS, BOIS DE BOULOGNE (from Alphand's *Les Promenades de Paris*), see p. 118.



on rockwork, over which its close-growing branches could hang. Some promising *Alpine Auriculas* came from Mr. C. Turner; among them *Colonel Scott*, *J. H. Nelson*, and *Lucius* were very promising indeed.—R. D.

WOOD AND WATER IN THE BOIS DE BOULOGNE.

TREES, and rocks, and streams of water, are just the materials which, in the hands of a clever master of the art of landscape gardening, may be wrought up into a picture, which, avoiding every vestige of artificiality, may rise to the highest order of beauty, and take rank as an example of the highest style of art. Each of them possesses its own separate and peculiar features of interest, but it is when they are happily blended that they are most calculated to win admiration. The scene from the Bois de Boulogne, represented in the admirable woodcut printed on p. 117, shows them thus advantageously associated. We owe the opportunity of introducing it to the courtesy of M. Rothschild, publisher of M. Alphand's grand work *Les Promenades de Paris*, for which it was engraved.—M.

KITCHEN GARDENING FOR MAY.

IF there are any failures among the Spring-sown crops, fresh sowings should be made at once. Attention must also be paid to the thinning of the young crops as soon as they are fit to handle, but the thinning should be gradual. Take advantage of every favourable opportunity to run the hoe between the rows of *Onions*, *Carrots*, *Parsnips*, *Beet*, *Parsley*, *Turnips*, *Salsify*, and *Scorzonera*; also between early crops of *Cauliflowers*, *Cabbages*, *Lettuces*, *Spinach*, and other crops. Slugs are sometimes (especially in showery weather) very destructive among seedling crops; some quick-lime strewed over them early in the morning will destroy them. Make two sowings of late *Peas* this month, in deeply-dug, or trenched, well-manured ground; sow also some more *Broad Beans* and *Dwarf French Beans*. Sow *Scarlet Runners* at the beginning of the month for the main crop, and towards the end for succession. Sow a good breadth of *Parsley* for winter and spring use; also *Cauliflowers* for autumn and winter use, and a good breadth of *Turnips*; and make successional sowings of *Spinach*, *Lettuces*, *Radishes*, and *Salading*. Plant out the early-sown *Celery* plants into trenches four feet apart, filled within a few inches of the top with good rotten dung, and if the weather be dry, see that it is all watered; in the spaces between the trenches plant *Cauliflower* or *Lettuce*, or sow *Spinach*. Plant out spring-sown *Cauliflowers* and *Lettuces*; also the earliest sown *Savoy*s, *Brussels Sprouts*, *Borecole*, *Broccoli*, &c., on ground that has been well manured and deeply dug, or trenched. *Leeks* sown in March will now be fit for transplanting; plant in rows, twelve or fourteen inches, apart and nine inches in the row, on deeply dug, well manured ground. Earth up *Potatos* when fit; and prick out a large breadth of *Celery*. Clear away the materials used for blanching *Seakale*, and fork over the ground. This is a good time to make plantations of *Herbs* of all kinds. Towards the end of the month *Tomatos* may be planted at the foot of a south wall. Prepare ridges for *Cucumbers* and *Vegetable Marrows*. Continue to ply the hoe constantly in fine weather not only between growing crops,

but over all vacant ground, to keep down weeds. Clean and roll the gravel walks.—M. SAUL, *Stourton*.

GARDEN GOSSIP.

GENERAL Pleasanton, of Philadelphia, is reported to have grown some extraordinary *Grapes* under violet-coloured glass. Attempts have been made to explain his success, by the supposition that the violet glass which he used had a concentrating effect upon the more chemically active rays contained in ordinary light. Professor Thiselton Dyer, however, recently pointed out that what was done in passing white light through coloured glass was to subtract from, not add to it. As regards the formation of leaf-green in plants, and the evolution of oxygen from their foliage, it was the red and yellow rays, rather than the violet, which were most effective. Violet light was anything but advantageous to two of the things that were most essential in plant growth. This was a rather unexpected result, because it was the most refrangible or violet rays in light which had the greatest chemical effect, as for example, in photography. But in any case violet glass could only part the violet rays from the red; it could not add to their effect. The upshot of our knowledge about the subject was far from calculated to encourage the adoption of General Pleasanton's system. The green colouration of leaves, as every one knew, required the influence of solar energy to accomplish the deoxidation essential to its development. The tints of flowers, on the other hand, were rather results of oxidation—were, indeed, in a sense, products of combustion, and hence could, to a great extent, be developed apart from the influence of light. A blue Hyacinth had developed its colour in a perfectly dark wine-cellar. A red Hyacinth had, however, been bleached by this treatment, and it was well known also that the white Lilac of Parisian florists was the coloured variety grown under peculiar conditions with a very limited supply of light. Probably in these cases light was necessary to promote the oxidation which produced the colouration.

—MR. D. T. FISH's remarks on *Hard Soil for Roses* are valuable and well-put. In planting Dog-roses for stocks it is customary in the nurseries, even when the soil is strong, to tread them as firmly as possible. The finest of Climbing Roses I ever saw was composed of Ayrshire, Sempervirens, and Multiflora, the ground beneath a paved north border on which Alpines in pots were set, with a hard gravel walk beyond. The roses received water in dry summer weather by the watering of the Alpines. Once, when digging for gravel, I removed some Sempervirens Roses and cleared away two feet of the surface soil. Some of the roots of the roses were left behind in the gravel, and these shot up with extraordinary vigour, quickly forming large bushy plants. Here was a hint from nature. Why should not roses be propagated from roots?—WILLIAM PAUL.

—ACCORDING to Mr. G. D. Brumham, the *Coming Summer* will be a hot one. The laws on which this opinion is based are these:—1. When the mean temperature of the period from the middle of February to the middle of March is very high (about $44^{\circ}\cdot 5$), the following summer is always very hot. The only instances of such a high mean temperature at Greenwich occurred in the following years, viz.:—1826 ($44^{\circ}\cdot 8$), 1834 ($45^{\circ}\cdot 8$), 1846 ($46^{\circ}\cdot 3$), 1859 ($46^{\circ}\cdot 3$), and 1868 ($44^{\circ}\cdot 7$), and all these years were remarkably hot. This year the mean temperature of the period referred to was $45^{\circ}\cdot 5$. When the mean temperature of the period referred to is even a slight fraction below 44° , a warm summer follows; such was the case in 1822, 1849, 1850, and 1861. 2. When the rainfall is very slight in October or November (not more than 0·8 inch) the succeeding summer is always very hot. The following are all the instances that have occurred at Greenwich relative to this law since rainfall registration was commenced there:—October, 1830 (0·8 inch); October, 1834 (0·4); November, 1851 (0·6); November, 1858 (0·5); November, 1867 (0·4); and November, 1872 (0·5). The following summers of 1831, 1835, 1852, 1859, and 1868 were very hot; therefore, according to this law, the coming summer must be hot. As a very low barometrical mean in the first three months of the year indicates considerable rain for the summer, it appears that the coming season will have a rainfall above the average, notwithstanding several periods of dry weather.

—IN reference to the *Cultivation of Gerardias*, Mr. E. S. Rand, who is well known amongst American horticulturists, points out, as regards the

suggestion printed at p. 33, that while the beauty of these plants cannot be too highly praised, their cultivation is attended with great difficulty. "I have," he writes, "never known one successful cultivator. I have never heard of its being raised from seed, though the attempt has been frequently made. I have often transplanted *G. quercifolia*, *flava*, and *Pedicularia* from the woods, but they have invariably died out after a few seasons." The reason assigned for this is that they are root-parasites, a peculiarity most marked in *G. quercifolia*, which is the handsomest of them all. Mr. Rand adds, that "damp, spongy ground would be the last place in which to search for yellow Gerardias, all of which grow in open rocky woods in very dry soil; and recommends sowing in light leaf-mould kept a little moist until the plants come up; he would afterwards keep the plants rather dry than wet, though not allowing them to suffer from drought. We fear, however, the experience thus recorded is against the probability of the Gerardias being domesticated in our gardens.

— THE *Schedule of Prizes* for the *Birmingham Show* of the *Royal Horticultural Society* in June next, has been drafted with great care, and in a liberal and catholic spirit. The sum total offered for prizes is £1,659 1s. Of this amount, £661 18s. is offered by the Royal Horticultural Society, and £997 3s. by the local committee. Of the latter, £105 1s. is offered for horticultural buildings, implements, &c., in the shape of medals; and £891 18s. for plants, fruit, vegetables, and cut flowers. Two meetings will be held on June 26th and 27th for the discussion of subjects bearing upon horticulture, each being opened with a short address,—that on the first day by Professor Dyer, "On Recent Progress in the Scientific Principles of Horticulture;" that on the second by T. Moore, Esq., F.L.S., "On the Recent Progress of Practical Horticulture."

— A SPECIMEN of the *Cacao*, *Theobroma Cacao*, which has recently been fruited at Glasnevin, was exhibited at a recent meeting at South Kensington. The capsule shown by Dr. Moore was yellowish, oblong, pointed, and furrowed longitudinally, of fleshy consistence, and containing numerous seeds imbedded in a pulpy aril which had a slightly acid flavour, tempered with that of Cucumber.

— THE next exhibition of the *Royal National Tulip Society* will be held on May 25, in the Botanic Gardens, Old Trafford, Manchester, when £60 will be given in prize-money.

— THE *Neil Bequest*, in the gift of the Council of the Royal Caledonian Horticultural Society for the time being, has been voted to Mr. Andrew Turnbull, gardener to the Earl of Home, Bothwell Castle; and amounts to the handsome sum of £65. Mr. Turnbull's worth as a man, and his abilities as a practical gardener, well entitle him to this honour.

— THE Royal Horticultural Society, in commemoration of its last year's *Visit to Nottingham*, and in acknowledgment of the hearty support received from the horticulturists of that town, have placed at the disposal of the Nottingham Horticultural Society and the St. Ann's Society, respectively, three gold medals, to be awarded at the exhibitions of these societies during the years 1873, 1874, and 1875.

— PRESENTATIONS have recently been made to Mr. J. S. Tyerman, and Mr. G. Eyles: to the former, on the occasion of his retiring from the curatorship of the Botanic Gardens of Liverpool; to the latter, in acknowledgment of his successful management of the Royal Horticultural Society's Shows. That to Mr. Tyerman consisted of a handsome silver centrepiece, bearing the inscription:—"Presented to JOHN S. TYERMAN, Esq., on his resignation of the curatorship of the Botanic Gardens, Liverpool, by a few friends, to mark their high personal esteem, and in recognition of his scientific attainments. 1872." That to Mr. Eyles consisted of a pair of claret jugs, and a purse of about £80, the jugs bearing the following inscription:—"To GEORGE EYLES, from 125 horticultural friends and exhibitors, as a token of personal esteem, and in appreciation of his successful management of the Royal Horticultural Society's Flower Shows at Kensington, and in the provinces. March 6, 1872."



J. L. Macfarlane Del et Zucco.

F. Waller

PETUNIA
1. Souvenir de Chiswick 2. Pantaloon.

NEW DOUBLE FRINGED PETUNIAS.

WITH AN ILLUSTRATION.

IN the accompanying illustration will be found portraits of two remarkably beautiful double-flowered Petunias raised at Chiswick, and which we believe rank amongst the earliest of the fringed double-flowered varieties. Their history is this:—Mr. Barron obtained from a packet of Continental Petunia seed, one plant which produced single flowers having the margin fringed. A cross was effected between this and some of the double-flowered sorts grown at Chiswick, and the result was the production of varieties combining the double flowers with the fringed margin. PANTALOOM (fig. 2), the lighter of the sorts portrayed, is a very distinct and handsome mottled and margined flower. That named SOUVENIR DE CHISWICK (fig. 1) is equally handsome, but darker in the ground-colour, and more blotched than margined.

These double-flowered Petunias are exceedingly valuable as decorative pot-plants for the greenhouse and conservatory, their habit being so much more compact than most of the single-flowered sorts, and the flowers so much more durable. The grotesque markings of the blotched sorts also give them a distinctive and interesting appearance. Young plants raised annually in succession, and grown on for the purpose, form some of the prettiest objects which can be provided for the ornamentation of this department of the garden.—T. M.

ELECTION OF FRUITS FOR SMALL GARDENS.

FOLLOWING up the suggestion made by Mr. Fish at p. 70, as to the utility of eliciting the opinions of various growers of fruits on the important question—Which are the best varieties for general cultivation? several of our correspondents have been good enough to send in lists in accordance with the scheme proposed, and we have now the pleasure of presenting the results of the election in a tabulated form, so far as it relates to the fruits recommended for the small gardens of cottagers.

The lists we have here collated may be taken as giving the condensed opinions of many of our best gardeners as to the sorts of fruits which are really most worthy of general cultivation. In making up the several selections, it will be seen that we have arranged the sorts according to the number of votes obtained, those which have gained most standing at the head of each list. The returns have been furnished by the following correspondents:—

- | | |
|---------------------------------|------------------------------------|
| 1. Mr. T. Baines, Southgate. | 9. Mr. A. Henderson, Thoresby. |
| 2. Mr. A. F. Barron, Chiswick. | 10. Mr. A. Parsons, Danesbury. |
| 3. Mr. J. Clark, Studley Royal. | 11. Mr. J. Powell, Frogmore. |
| 4. Mr. J. Cox, Redleaf. | 12. Mr. T. Record, Hatfield. |
| 5. Mr. A. Cramb, Tortworth. | 13. Mr. M. Saul, Stourton. |
| 6. Mr. W. Earley, Valentines. | 14. Mr. Z. Stevens, Trentham. |
| 7. Mr. D. T. Fish, Hardwicke. | 15. Mr. W. Tillery, Welbeck. |
| 8. Mr. R. Gilbert, Burghley. | 16. Mr. G. Westland, Witley Court. |

BEST 2 PEACHES.

Royal George, 1, 2, 5, 7, 8, 9, 13, 14, 15, 16.
 Barrington, 4, 6, 9, 11, 16.
 Bellegarde, 6, 11, 12.
 Grosse Mignonne, 2, 7, 10.
 Noblesse, 4, 8, 12.
 Early York, 10, 15.
 Malta, 3, 5.
 Early Alfred, 14.
 Rivers' Early York, 3.
 Têton de Vénus, 1.
 Walburton Admirable, 13.

BEST 2 NECTARINES.

Elruge, 2, 4, 5, 7, 8, 9, 10, 13, 15, 16.
 Downton, 1, 5, 6, 9.
 Violette Hâtive, 10, 11, 13, 14.
 Pitmaston Orange, 3, 12, 15.
 Victoria, 2, 8, 14.
 Balgowan, 1, 6.
 Hardwicke, 12, 16.
 Early Newington, 4.
 Murrey, 11.
 Pine-Apple, 3.
 Rivers' Orange, 7.

BEST 2 APRICOTS.

Moorpark, 1, 2, 3, 4, 6, 7, 8, 9, 11, 12, 13, 14
 (two trees), 15, 16.
 Kaisha, 2, 7, 10, 15.
 Orange, 1, 4, 8, 13.
 Royal, 5, 9, 10.
 Shipley's, 3, 11, 12.
 Hemskerk, 5.
 Large Early, 16.
 St. Ambroise, 6.

BEST 3 CHERRIES.

May Duke, 1, 2, 3, 5, 7, 8, 10, 11, 12, 13, 14,
 15, 16.
 Elton, 2, 3, 7, 10, 13, 16.
 Black Tartarian, 1, 6, 8, 10, 14.
 Bigarreau, 1, 5, 9, 13.
 Morello, 2, 4, 9.
 Belle d'Orléans, 9, 12.
 Bigarreau Napoléon, 14, 16.
 Black Eagle, 5, 7.
 Black Heart, 11, 12.
 Kentish, 8 (preserving), 15 (kitchen).
 Early Bigarreau, 4.
 Frogmore Early Bigarreau, 6.
 Jeffreys' Duke, 6.
 Knight's Early Black, 4.
 Late Duke, 3.
 Waterloo, 15.

BEST 2 RED CURRANTS.

Raby Castle, 1, 3, 5, 6, 7, 8, 9, 10, 11, 12,
 13, 16.
 Red Dutch, 1, 2, 3, 7, 8, 9, 12, 14, 16.
 Knight's Large Red, 2, 15 (two).
 La Fertile de Palluan, 6, 10.
 La Versaillaise, 5, 13.
 Cerise, 4.
 Long-bunched Red, 4.
 Mammoth, 14.
 Warner's Grape, 11.

BEST BLACK CURRANT.

Black Naples, 1, 2, 3, 4, 5, 7, 8, 9, 10, 12, 13,
 14, 15, 16.
 Black Grape, 11.
 Lee's Black, 6.

BEST 4 GOOSEBERRIES.

Red Warrington, 1, 2, 3, 4, 7, 8, 9, 10, 11, 12,
 13, 14, 15 (for hanging late), 16.
 Whitesmith, 1, 2, 3, 4, 8, 10, 11, 13, 16.
 Red Champagne, 2, 10, 14, 15, 16.
 Yellow Champagne, 7, 10, 13, 14, 16.
 Crown Bob, 1, 3, 4, 8.
 Keens' Seedling, 7, 11.
 Rifleman, 8, 11.
 Rough Red, 14, 15 (for preserving).
 Angler, 12.
 Antagonist, 6.
 Glory of Ratcliffe, 9.
 Green Gage, 3.
 Hairy Red, 1.
 Hedgehog, 9.
 Ironmonger, 13.
 Leader, 6.
 Nonpareil, 12.
 Roseberry, 2.
 Rumbullion, 15 (for bottling).
 Stockwell, 6.
 Sulphur, 9.
 White Champagne, 7.
 Wonderful, 6.
 Yellow Ball, 4.
 Yellow Boy, 12.

* * No. 5 did not vote.

BEST 4 GOOSEBERRIES FOR SIZE.

London, 1, 3, 4, 6, 7, 9, 13.
 Antagonist, 3, 6, 7, 16.
 Thumper, 1, 3, 4, 15.
 Catherina, 1, 4, 7.
 Crown Bob, 8, 13, 15.
 Roaring Lion, 8, 11, 13.
 Stockwell, 6, 7, 16.
 Green Overall, 2, 9.
 Wonderful, 11, 13.
 Bumper, 8.
 Criterion, 3.
 Dan's Mistake, 11.
 Drill, 16.
 Dublin, 2.
 Eagle, 4.
 Freedom, 1.
 Green London, 11.
 Legerdemain, 2.
 Leveller, 6.
 Queen of Trumps, 2.
 Railway, 9.
 Snowdrop, 9.
 Sovereign, 15.
 Thrasher, 8.
 Two-to-One, 16.
 Whitesmith, 15.

* * Nos. 5, 10, 12, and 14 did not vote.

BEST 6 PLUMS.

Victoria, 1, 2, 3, 4, 7 (k), 8, 9, 10, 11, 13, 14, 16.
 Green Gage, 1, 2, 3, 5, 8, 9, 11, 13, 14, 15, 16.

Coe's Golden Drop, 1, 5, 6, 7, 9, 11, 13, 14.
 Early Rivers, 2, 3, 5 (k), 8, 10, 15, 16.
 Jefferson, 2, 3, 5, 7, 10, 13, 14.
 Kirke's, 10, 11, 13, 14, 15.
 Denniston's Superb, 5, 6, 7, 9.
 Diamond, 4, 6, 7(k), 12.
 Prince Englebert, 2, 4, 15, 16.
 Mitchelson's, 3, 4, 6.
 Orleans, 4, 8, 12.
 Prince of Wales, 4, 8, 10.
 Washington, 11, 13, 14.
 Damson, 1, 9.
 Pond's Seedling, 1, 6.
 Prune Damson, 12, 16.
 Reine Claude de Bavay, 1, 7.
 White Magnum Bonum, 5 (k), 12.
 Autumn Compôte, 2.
 Belle de Septembre, 12.
 Clustered Damson, 10.
 Cox's Emperor, 16.
 Early Green Gage, 6.
 Early Orleans, 15.
 Fellemberg (Italian Prune), 15.
 Frogmore Orleans, 11.
 Gibson's Round Damson, 8.
 Perdrigon Violet Hâtif, 9.
 Transparent Gage, 3.
 White Bullace, 12.

BEST 6 PEARS.

Louise Bonne of Jersey, 1, 2, 3, 5, 7, 9, 10, 11, 13, 14, 15, 16.
 Marie Louise, 1, 2, 3, 5, 6, 7, 9, 10, 11, 12, 13, 14.
 Williams' Bon Chrétien, 1, 2, 3, 4, 7, 8, 9, 10, 11, 13, 15, 16.
 Beurré Diel, 3, 4, 12, 13, 14.
 Winter Nelis, 3, 5, 7, 9, 14.
 Beurré d'Amanlis, 4, 5, 9, 10.
 Jargonelle, 1, 3, 13, 16.
 Joséphine de Malines, 6, 12, 15, 16.
 Bergamotte Esperen, 12, 15, 16.
 Jersey Gratioli, 4, 10, 15.
 Comte de Lamy, 8, 14.
 Easter Beurré, 6, 11.
 Glou Morceau, 2, 7.
 Ne Plus Meuris, 2, 12.
 Thompson's, 1, 9.
 Alexandre Lambré, 10.
 Autumn Bergamot, 12.
 Baronne de Mello, 4.
 Beurré Bosc, 2.
 Beurré d'Aremberg, 8.
 Beurré de Rance, 14.
 Beurré Giffard, 5.
 Beurré Hardy, 8.
 Beurré Superfin, 6.
 Catillac, 1.
 Chaumontel, 6.
 Citron des Carmes, 15.
 Doyenné du Comice, 6.
 Duchesse d'Angoulême, 8.
 Dunmore, 13.
 Epine du Mas, 11.
 Fondante d'Automne, 8.

Golden Russet, 11.
 Monarch, 5.
 Passe Colmar, 7.
 Pitmaston Duchesse d'Angoulême, 16.
 Urbaniste, 4.

BEST 6 APPLES.

Dumelow's Seedling, 2, 3, 4, 8 (k), 9, 10, 11, 13, 14, 15, 16.
 Blenheim Pippin, 1, 2, 4, 5, 6, 7 (k), 8, 9, 15, 16 (several varieties of this are grown in this neighbourhood).
 Cox's Orange Pippin, 2, 3, 4, 6, 7, 10, 13, 14, 16.
 Lord Suffield, 1, 2, 3, 7 (k), 13, 14, 15, 16.
 King of the Pippins, 2, 3, 7, 8, 9, 12, 13.
 Cox's Pomona, 4, 10, 11, 15.
 Alfriston, 1, 6, 12.
 Hawthornden, 8 (k), 12, 16.
 Ribston Pippin, 1, 9, 14.
 Court-Pendu-Plat, 1, 14.
 Frogmore Prolific, 4, 11.
 Kerry Pippin, 5, 7.
 Mère de Ménage, 12, 14.
 Reinette du Canada, 5 (k), 8 (k, d).
 Adams' Pearmain, 6.
 Betty Geeson, 15.
 Cockpit, 13.
 Dredge's Fame, 6.
 Dutch Mignonne, 3.
 Early Julien, 5 (k).
 Emperor Alexander, 12.
 Golden Noble, 7 (k).
 Golden Winter Pearmain, 16.
 Gravenstein, 9.
 Herefordshire Pearmain, 11.
 Irish Peach, 2.
 Keswick Codlin, 10.
 London Pippin, 6.
 Manks Codlin, 13.
 Margil, 1.
 Nelson's Glory, 9.
 New Hawthornden, 10.
 Northern Greening, 10.
 Rosemary Russet, 11.
 Small's Admirable, 11.
 Sturmer Pippin, 15.
 Waltham Abbey Seedling, 4.
 Warner's King, 5 (k).
 Westmoreland, 8 (k).
 White Nonpareil, 5.
 Winter Queening, 12.
 Yorkshire Greening, 3.

BEST 3 STRAWBERRIES.

Keens' Seedling, 1, 5, 6, 7, 10, 13, 14, 16.
 Dr. Hogg, 1, 2, 3, 6, 7, 9, 16.
 President, 3, 4, 9, 13, 15.
 Sir Charles Napier, 1, 2, 4, 8, 15.
 Sir Joseph Paxton, 4, 5, 10, 11, 12.
 Vicomtesse Héricart de Thury, 2, 11, 16.
 Black Prince, 12, 15 (preserving and earliness).
 Elton, 7, 13.
 Frogmore Late Pine, 8, 11.
 Black Bess, 8.
 British Queen, 12.
 Eclipse, 9.

John Powell, 5.
Ne Plus Ultra, 3.
Oscar, 14.
Premier, 6.
Rivers' Eliza, 10.
Sir Harry, 14.

BEST 2 RASPBERRIES.

Fastolf, 1, 3, 4, 5, 7, 9, 10, 11, 12, 15.

Red Antwerp, 1, 3, 5, 8, 13.
Prince of Wales, 2, 8, 9, 15.
Yellow Antwerp, 2, 7, 12.
Carter's Prolific, 4, 6.
Belle de Fontenay, 10.
Lee's Prolific, 6.
Magnum Bonum, 13.
Northumberland Fillbasket, 11.

* * Nos. 14 and 16 did not vote.

The other lists, prepared in like manner, will appear hereafter; in the meantime, it may be explained that a reference to the numbered list of contributors and to the figures printed after the names of the several fruits, will show the number of votes given to each, and also by whom the particular sorts are recommended. We hope to deal more largely with this question of pomological statistics at some future period. For the present, we commend this first effort to the consideration of our readers, and shall be glad to receive any suggestions by which future returns could be improved.—T. M.

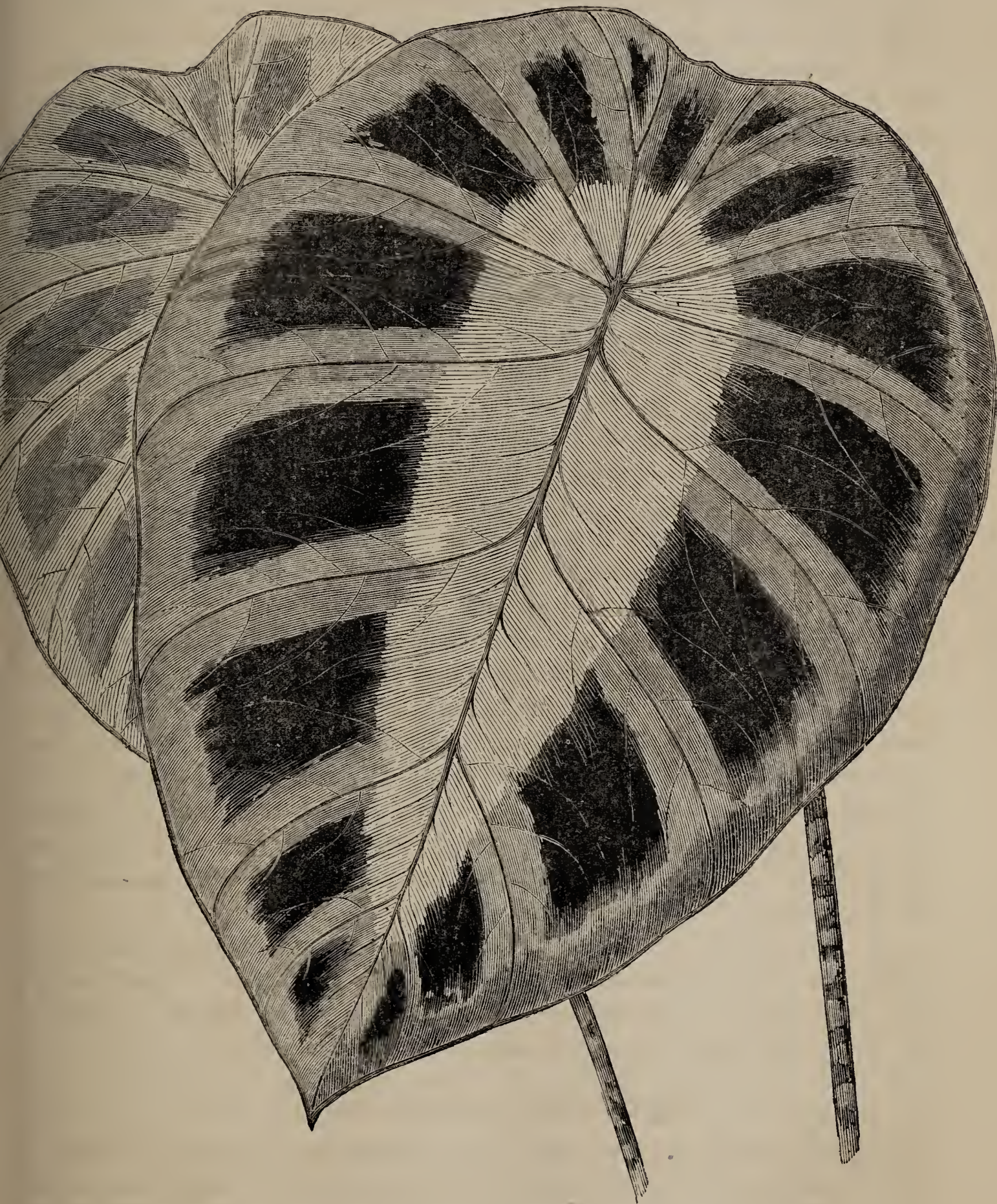
THE CULTURE OF ERIOSTEMONS.

THESE are pretty plants when nicely grown. Even when out of bloom they form neat evergreen bushes, and when the numerous star-shaped white blossoms make their appearance, they are really handsome objects for the conservatory. Some of them are naturally more dense in habit than others; the latter require the tops to be pinched off to induce them to become more compact. Young plants should be shifted on into pots one size larger than those they are taken from, using a compost of five parts fibry peat broken up into small pieces (not sifted), and one part good loam well pulverized between the hands, a liberal addition of silver-sand being made, and the whole well mixed together. In draining, lay plenty of crocks in the pot, with some fibry peat over them, to prevent the soil working down among the drainage and choking it. Pot the plants rather firmly; place them in the greenhouse where plenty of light and air can be given them. Pay strict attention to watering. When water is given, it should be made to pass freely through the ball. About the end of July the plants should be put out to harden in a sunny position, and should remain there till the middle of September, when they must be removed to their winter quarters. Care must be taken, while they are out-doors, to prevent worms from getting into the pots, by using a bed of coal ashes to set them on. The following sorts are well worth growing:—*E. intermedius*, *E. pulchellus*, *E. cuspidatus*, and *E. buxifolius*.—H. CHILMAN, *Somerley*.

ALOCASIA MARSHALLII.

SOME of the most highly decorative of stove plants of the "fine-foliaged" class belong to the Arad family, of which the plant we now figure, thanks to Mr. Bull, is a member of no mean rank. It is related, as the figure shows, to *A. Jenningsii*, but it differs from that strikingly handsome plant in having a broad median grey or silvery band, which adds greatly to the effect of

the leaves. The leaf-blades stand almost vertical, and are of an ovate form, peltately attached to erect green motley stalks. The colour is a bright green, marked towards the edge in the spaces between the principal lateral veins with



ALOCASIA MARSHALLII.

broad wedge-shaped blotches of blackish purple. It was imported from India by W. Marshall, Esq., of Enfield, after whom it is named, and has passed into the hands of Mr. Bull, of Chelsea.

A GRIEVOUS WASTE OF FORCE AND TIME.

IN Horticulture, such, I fear, is the attempt to grow our more tender fruit on open walls: our best Pears in the open air. One or two sharp frosts in April or May ruin the prospects of the fruit-harvest of the year; and of late years we hardly ever escape these exceptional nights—they have become as regular as the revolving seasons. The trees may be perfect in form, in robust health, without spot as to cleanliness, and may display sheets of blossom, as the phrase runs; but all to no purpose. A wave of chilling cold trembles through the atmosphere, scattering flakes of snow and showers of hail in its rear. The night closes in; the dark clouds roll away like curtains drawn aside from the clear face of the sky; the stars sparkle with unusual brilliancy; dead stillness reigns o'er earth and heaven, and the stealthy frost descends and pierces myriads of open blossoms with its sharp arrows barbed with the coldness of death—and all is over. Oh, it is trying! Yesterday the fruit garden smiled a veritable Eden of beauty and promise, and hope piled up its fruit-baskets till they ran over with plenty. To-day hope dies, and is buried beneath a forest of blackened blossoms, frost-bitten to the heart. And so the sorrowful tale is told year after year. We begin afresh to nurture and strengthen the trees, and to reap again and again the same bitter fruits of disappointment. This contest with the elements seems hopeless. The odds are all against the cultivator, and he can hardly win unless the caprice of the weather permits.

Now, I submit, we have had more than enough of this reckless game of chance, which is almost like the old formula of "Heads I win, tails you lose." It is high time that we tried a wrestle with the atmosphere, instead of being its mere sport, like corks on the eddying current. Our cultural skill and force have been expended on fitting our fruit trees to endure all weathers. We cannot do it. Frost of from 7° to 10° of intensity will strip them clear of fruit, do what we may. We must therefore, as the seasons go, turn our attention to the amelioration of the air, or the creation of an artificial atmosphere adapted to the character, and calculated to ensure the safety of our fruit crops.

A good deal may be done by improved sites, and draining, and skilful husbandry. But when all this is done, we must still arrange to have less cold and more warmth than nature vouchsafes to us from March to May, if we would have regular and certain crops of fruit later in the year. In one word, we must PROTECT OUR TREES WITH GLASS. Thus only can we be certain of a profitable return for all the time, cultural force, and capital expended. In what way this is best done is still an open question, but that it must be done ought from henceforth to be considered a closed one, unless, indeed, we are prepared to sacrifice an enormous amount of horticultural force for no returns whatever but those of vexation and disappointment.

Orchard houses—permanent or movable—glass screens, glass coping, and cordon and conical tree-cases, will be common as gooseberries in the fruit gardens

of the future ; and our successors will greatly marvel at our consummate folly in going on for so many years in a game of blind chance, in which we were sure to be worsted, with our capricious, harsh, inexorable climate.—D. T. FISH, *Hardwicke*.

HARDY TERRESTRIAL ORCHIDS.

HARDY Orchids of the terrestrial type have generally had the credit of being difficult to keep and difficult to cultivate. Whatever the obstacles to success may be, those who have seen the fine groups of these plants exhibited during the last two or three years at the spring metropolitan shows, by Mr. Needle, gardener to H.R.H. the Comte de Paris, at York House, Twickenham, will readily admit that he has at least most successfully grappled with and overcome them ; and to a communication made through him to the *Gardeners' Chronicle*, whence we have borrowed the annexed woodcut of one of Mr. Needle's specimens—*Ophrys tenthredinifera*—we are indebted for the following information as to his method of treatment :—

The Comte de Paris is, it appears, a great admirer and ardent collector of these little gems, and is well acquainted with their native habitats on the Surrey Hills, and in the South of France, in Italy, and in Spain, from all which places the collection at York House has been enriched ; and his worthy and intelligent gardener, Mr. Needle, cultivates the plants with great success. Experience has taught him that in order to get together a stock of any particular sort, the tubers must be collected. The tubers are both developed and matured the season before they flower. Thus the plants may be had in flower every spring, a fresh tuber being formed the summer before, while the old one having played its part—that is, flowered—decomposes in much the same way as a Potato “set.” Whoever intends growing these plants should remember that their greatest enemies are heat and water, either of which applied in excess is fatal to their well-doing. Moreover, they will not stand forcing or retarding, but must be allowed to flower in their own due season. The plants which flowered early in the spring, and which about the beginning of May were going to rest, will be kept in an open frame facing the south, water being gradually withheld until they are matured.

This mode of treatment is followed only in the case of those which have round tubers, as the *Ophrys*, which may dried off ; while the fusiform-rooted species must always be kept moist—not necessarily wet. When the plants are sufficiently dried off, which is readily to be seen by the decaying foliage, they must be removed to a cool shady frame under a north wall, where no sun can reach them, where they may remain dry and at rest until they show signs of starting into growth again in the autumn. They should then be turned out, and be fresh potted in good turfy loam, mixed with a little leaf-mould and sand or road-scrapings. The pots must be thoroughly drained, and the soil be of an open, porous nature, or success will not follow. These conditions are so important in themselves, that it does not seem to matter much what the compost is, so long as



OPHRYS TENTHREDINIFERA.

they are secured. After the plants are newly potted they may be left in the cold frame until they have made a middling growth, when they may be removed to

the blooming-frame, provided with one row of piping—which is, however, only used for keeping out frost and dispelling damp. Here they will finish their growth, and may then be removed to the conservatory or any other cool house to flower. Mr. Needle finds, from experience, that they thrive best when grown five tubers in a 5-in. pot, the tubers (like cuttings) growing much stronger when situated near the sides of the pots. The bulbs of the *Orchis* or fusiform-rooted section will not bear drying off; otherwise they may be treated in the same way as the *Ophrys*. For general cultivation Mr. Needle recommends the following:—

Ophrys tenthredinifera, the strongest grower of all.	O. ferrum equinum.	O. maculata.
O. lutea.	O. ericolor.	O. papilionacea.
O. Speculum.	O. atrata.	O. quadripunctata.
O. apifera, and its variety mutilex.	O. arachnites.	O. longicruris.
O. apiculata.	O. aranifera specularia.	O. tephrosanthos densiflorus.
O. fusca.	Orchis Morio, and its several varieties.	Serapias Lingua.
O. mammosa.	O. laxiflora.	S. pseudo-cordigera.
	O. mascula.	Gymnadenia conopsea.

TRANSMITTING SEEDS AND CUTTINGS.

THE introduction of certain seeds in a fit state for germination has long been wished for by cultivators. I have repeatedly tried to get collectors to send home seeds in strong earthen jars, or bottles firmly packed in soil and closely corked, the soil to be taken 6 or 8 inches under the surface, so as to contain the natural moisture only. However, few individuals seem inclined to give this method a fair trial, being rather disposed to send by the old system, viz., in dry paper. As far back as 1834 I introduced in this way acorns of many varieties of American Oaks in excellent condition for growing, while portions of the same lots of seeds, brought home in paper and in canvas bags, did not succeed. Some acorns were also brought home in a box between layers of Sphagnum Moss having the superfluous moisture previously wrung out of it. By this method of packing the acorns all succeeded well.

Dr. Little, of Singapore, a gentleman eminently distinguished for his horticultural skill and ardent love for the science of botany, has been very successful in introducing into this country many rare plants, such as Gutta Percha (*Isonandra Gutta*), and many rare and valuable Orchids. Dr. Little seldom misses an opportunity of sending home seeds peculiar to his district, but it too frequently happens that they are completely dried up before reaching this country. During his visit to Edinburgh, in the year 1870, I told him of the disappointments so often experienced with many of his seeds, and recommended him to try the stone-bottle system; and about the middle of November last I had the pleasure of receiving a stone jar from him filled with Palm seeds, firmly packed in soil, all quite fresh and capable of germination. In districts where sphagnum moss abounds, I would recommend it in preference to soil, as it retains the moisture for a much longer time, and is not liable to mould or decay. In sphagnum the radicles of the seed are often slightly protruding when they reach their destination, while the soil, with its natural moisture, keeps the seeds much in the same con-

dition as when sent away. Either system is good, and ought to be more generally adopted, more particularly now, with the facilities afforded by the Post Office for transmission from abroad.

With pulpy or berried seeds, the above methods are by no means satisfactory. I have found from experience that all pulpy seeds succeed best when rubbed out in dry white sand. After being spread out in the sun or wind for a day or two to dry, the mass should be collected and packed firmly in stone jars, and when they reach their destination, the contents of the jars should be taken out and covered with soil according to the size of the seeds. By this method, I have frequently sent to Australia, Canada, and other distant parts of the world the seeds of Strawberries, Gooseberries, Raspberries, Brambles, Currants, Blackberries, Laurels, Elderberries, Thorns, Hollies, Yews, &c. Any portion of the pulp remaining with the seeds seems less liable to decay when mixed with dry white sand, than with soil or sphagnum.

For a long series of years it has been customary to send home seeds packed in charcoal, and I regret to see it still recommended. Such a practice, however, ought to be entirely abolished, as it tends to destroy the vitality of the seed. Unless in the case of seeds with very fleshy cotyledons, few others packed in this way ever grow. It is not necessary that seeds should always be sent home in comparatively dry soil in earthenware bottles. About 18 years ago, I had some seeds of the Akee fruit (*Blighia sapida*) sent from the West Indies. The seeds had been put into a large old blacking-bottle (after being thoroughly cleaned inside), in a mixture of soil and water, firmly closed with a clean bung-cork and thickly sealed over. When they reached me, I broke the bottle, and found every seed in a growing state. Each seed was put in a pot and set in a dark place for a time, light being admitted gradually; they soon lost their pale hue, and are now fine thriving trees. This simple method is also worthy of imitation with many hard tropical seeds.

Wide-mouthed glass bottles are also extremely useful to botanical collectors and amateur horticultural travellers. During my annual autumn peregrinations, both in this country and abroad, I have kept cuttings of rare stove and greenhouse plants in clean old pickle-bottles, in excellent preservation for a fortnight, with a little moss and water, and have always found them to succeed well after reaching home, if placed in an ordinary propagating pit or frame, in a pot of fine sand covered with a bell-glass. During a visit to the forest of Fontainebleau, I picked up a number of two-years old seedling Oaks, Elms, and other trees, and put them all in a glass bottle, among clean moss and water. After ten days' confinement, I broke the bottle, put the young trees into pots, and placed them for a time in a shady situation; they are now fine healthy trees. I mention this circumstance for the information of parties wishing to bring home from some remote, celebrated, or interesting spot a memorial of their visit, as was the case with myself. Such seedlings will succeed equally well if lifted any time during the spring, summer, or autumn months. The chief risk is the sudden exposure to air and light.

Alpine plants are easily conveyed from their native habitats by the glass-bottle system; a strong, wide-mouthed bottle will hold a large number of such plants, if put up in the way described. By this method they will reach home in a much better condition for growing than they do when rolled in brown paper, as frequently happens.—JAMES McNAB, in *Proceedings of Botanical Society of Edinburgh*.

KITCHEN GARDENING FOR JUNE.

S LUGS are very destructive to seedlings in showery weather; look out for them early in the mornings, and late in the evenings, and dust with quicklime. The young crops will now require attention in thinning, filling up vacancies, weeding, hoeing, and watering in dry weather. If not already done, *Onions*, *Carrots*, *Turnips*, *Beet*, &c., should be thinned to their proper distances apart; run the hoe between the rows afterwards, to loosen the surface-soil. Plant out towards the end of the month a good breadth of *Celery* in well-manured trenches, and water well in dry weather; few crops are more benefited than this by a constant supply of moisture; prick out the late sowing for late crops. *Spinach* may be sown, or *Lettuces* planted, between the *Celery* trenches. Get out large breadths of *Broccoli* of sorts, *Brussels Sprouts*, *Savoys*, *Borecole*, &c., on well-manured, deeply-dug ground, and water well until the plants are well established. Plant out *Marjoram* and *Basil* on warm, sheltered borders. Plant out large breadths of *Cauliflowers* at the beginning, and again towards the end of the month; these will come in for use in the autumn. Plant out *Lettuces* twice during the month, and plant some more *Leeks*. Sow *Endive* at the beginning, and again at the end of the month, for a main crop. Sow *Spinach* twice during the month, and *Lettuces* of sorts; also *Radishes* in cool situations. Sow *Peas*, *Broad Beans*, *French Beans*, and *Scarlet Runners* twice during the month for late crops. Sow a few *Early Horn Carrots* for drawing in the autumn, and *Onions* for drawing young, where they are much used. Sow *Small Salad* every ten days. Continue to earth-up and rod *Peas* when fit. Hoe and earth-up late *Potatos*, leaving the ridges rather wide at the top. Attend to the thinning, stopping, and nailing-in of *Tomato* shoots as they require it. Plant out *Cucumbers* and *Vegetable Marrows* on ridges. Cease cutting *Asparagus* after the middle of the month. Never let weeds get ahead; keep the hoe constantly at work, and maintain the greatest cleanliness and order.—M. SAUL, *Stourton*.

THE GUM CISTUS.

THE Gum Cistus, *Cistus ladaniferus*, is a plant upon which a vast amount of admiration has justly been expended. There is something, at once so chaste and so exceedingly beautiful, in a finely bloomed specimen of it—the flowers, born of May showers, seeming too delicate and lovely to remain but an hour or two in their full-blown state—that it is greatly to be wondered it is not everybody's plant; especially as it is at once easy to grow, and cheap, and not only hardy, but evergreen, and of moderate dimensions withal. Some of

our poets liken the snow-flake falling on the bosom of the stream, and being momentarily absorbed thereby, to sensual pleasure. A truer metaphor, perhaps, would have been this lovely flower, the pointed white bud of which issues from its protective calyx during the midnight hour, when in her period of repose showers of ethereal dew bathe all nature; unceasingly it swells, till, at the first embrace of Sol, on the early June morning, it quickly expands, appearing like a wild rose of the purest white, with purple spots at the base of each petal, the whole slightly, delicately crumpled, like the flowers of a poppy.

Each bloom—and they are produced abundantly—falls off and withers ere the noon-day sun registers its shade-line upon the dial; and as the shades of eventide thicken, it is left a pretty bloomless evergreen, bearing a strange contrast with its early morning vestiture, when its branchlets were robed with purest blossoms. It is, in fact, the most beautiful of the shrubs known as Rock-Roses, much the largest, and a true evergreen. Travellers tell that in its native habitat, which is Spain or Southern Europe, it diffuses all around a truly enjoyable perfume. I have, however, personally detected no trace of this latter in connection with British-grown examples, though the whole surface of each plant exudes a peculiar gummy or adhesive substance, which attaches itself freely and not very pleasantly to the fingers at all times when the branches are being handled. Perhaps, therefore, the peculiar characteristic alluded to above may be the result of a freer emission of this same substance, which becomes capable of diffusing an agreeable perfume in climates which are warmer and far more felicitous than ours. In regard to culture, this interesting plant flourishes best in a light, rich soil, though it will succeed in almost any. It has no great aversion to the shade of trees, though it, of course, does not bloom so abundantly in such positions. It is always advisable to place a strong stake to each plant, as it is generally somewhat weak at the base, though supporting a heavy head, which renders it liable to injurious wind-wavings.

The ordinary means of propagation are by seeds, by layers, and by cuttings. Perhaps the most easy is that of putting in cuttings under a hand-glass in a moderately moist, shady place during May. I think this is essentially a plant that would be benefited by being planted amongst “nurse-plants,” as many of our more delicate conifers are. It may be added that it flourishes on or near to the sea-coast.—WILLIAM EARLEY, *Valentines*.

SENECIO PULCHER.

DISCOVERED in South Brazil nearly 40 years ago by the indefatigable Tweedie, this splendid Groundsel—the handsomest of its race—was introduced into England from Buenos Ayres last year by Mr. Tyerman, formerly Curator of the Liverpool Botanic Garden, and was flowered by him at his present residence, Penlee Tregoonney, in Cornwall, in November. From specimens then sent to Dr. Hooker a fine coloured figure has been prepared for the *Botanical Magazine*, whence the accompanying woodcut is derived.



SENECIO PULCHER.

The plant is an annual, of robust habit, growing from one to four feet high, and sparingly clothed with lax cobwebby wool. The smooth cylindrical stem is

either simple or branched, the leaves thick and herbaceous, four to ten inches long, oblong, lanceolate, irregularly lobulate, with crenately-toothed lobules; they are of a bright green colour, the radical ones shortly stalked, those of the stem somewhat amplexicaul, with the bases slightly decurvent. The flower-heads, which grow in branched corymbs, are from two to three inches in diameter, with a bright yellow disk, and a bright red-purple or magenta ray, consisting of from twenty to thirty spreading, recurved, linear-oblong florets, which are forked at the top. This *Senecio* will be a grand addition to the hardy annuals of our flower-gardens.—T. M.

THE AURICULA SEASON OF 1872.

AURICULAS are becoming much more popular than they have been for many years past. Indeed the demand for them is so great that many fine old sterling varieties can scarcely be obtained; and had it not been for the persistence of a few good old florists, many varieties would have been utterly lost, which would have been cause for regret.

The *Auricula* bloom has generally this year been very fine, in consequence of the very mild winter. The plants were in bloom from the first week in March until the second week in May. The first exhibition at which they were invited was on April 17, and on this occasion they were shown in very fine condition, the sorts being generally the late-blooming varieties. Amongst the green-edges were the following:—

Leigh's Colonel Taylor.—A flower of fine quality, and a fine large truss; extra fine.

Headley's Alderman Wisbey.—A fine large flower of good properties, quite new, and distinct; very fine.

Campbell's Admiral Napier.—A good flower for a short time, but it soon becomes ill-shapen.

Traill's May-flower.—Much like *Lovely Ann*, but as shown, too coarse.

Smith's Lycurgus.—A fine large bold flower, of good quality, large truss, and very attractive.

Cheetham's Lancashire Hero.—A very fine flower of great substance, with a good large truss; sometimes shown as a grey edge; extra fine.

Dickson's Duke of Cambridge.—A fine sort, medium-sized pip, very flat, and quite distinct; fine.

Gairn's Lady Richardson.—A fine, flat flower, of good quality, and fine truss.

In the grey-edged class there were some remarkably fine flowers staged, particularly:—

Lightbody's Richard Headley.—A fine large truss, the pips very large and well expanded; extra fine.

Headley's George Lightbody.—A flower of great substance, the pips large, flat, and very smooth, and forming a fine large truss. This and the preceding are without doubt the two finest grey-edged varieties in cultivation.

Turner's Colonel Champneys.—A bright violet ground-colour, with fine large pip, and very large truss; free habit, and particularly attractive.

Headley's Alderman Charles Brown.—Much in the style of *Ringleader*; a fine large truss, with good large flat pips, and fine quality; a very fine flower.

Turner's Competitor.—A good large bold pip, having the colours well proportioned, and forming a fine large truss; of very free habit; fine.

Fletcher's Ne Plus Ultra.—A fine bold flower of great substance, and a handsome large truss; very fine.

Reade's Miss Giddings.—A fine large pip of great substance, good large truss, very constant; a fine bold flower.

Chapman's Maria.—A beautiful bright violet ground, fine large pip, and fine large truss ; very fine and very scarce.

Chapman's Sophia.—A very fine flower, bright violet ground-colour, fine large flat pips, of fine quality, and very free habit.

The principal of the white-edged varieties consisted of the following, the good varieties in this class being very limited :—

Heap's Smiling Beauty.—A very fine white-edge, with very dark ground-colour, fine smooth flat pips, and fine large truss ; extra fine.

Cunningham's John Waterston.—The pips large, flat, and very fine, good large truss, and very distinct ; very fine.

Taylor's Incomparable.—A good flat pip, fine dark ground-colour ; large and fine.

Smith's Ne Plus Ultra.—A very pretty distinct variety ; large and fine.

Gairn's Model.—A very nice flower, but rather small.

Horsefield's Highland Queen.—A very good flower, very similar to Lee's Bright Venus.

Summerscale's Catherina.—Good large truss, the pips rather too small, but very useful.

Among the Selfs were some striking flowers, the first-named being shown in very fine condition :—

Campbell's Pizarro.—Good large truss, very dark, fine smooth flat pips, and a fine white paste ; extra fine.

Spalding's Metropolitan.—A beautiful light violet, fine large truss, very fine and quite distinct.

Headley's Cantab.—A very dark self, good white paste, large truss, and very free.

Martin's Mrs. Sturrock.—Rosy crimson, good large flat pip, very smooth ; fine.

Spalding's Blackbird.—Very dark, and the paste very white ; large and fine.

Turner's Master Hole.—Very dark maroon, good white paste ; fine and quite distinct.

Turner's Cheerfulness.—A fine bright violet, fine quality, and very distinct.

Among the Alpines were some splendid varieties, some of them being quite new, and not yet sent out. The following may be specially noted :—

Turner's Mercury.—A fine rich crimson, very smooth, very circular, and a fine bright yellow paste ; extra fine.

Turner's Colonel Scott.—A very dark, fine smooth flower, the outline very circular, fine bright yellow paste, and quite distinct ; extra fine. This and the preceding variety have been awarded First-Class Certificates during the present season.

Turner's Marquis of Bute.—A fine, large, smooth, flat flower, shaded with lilac, fine light paste ; extra fine.

Turner's Sir Roger.—A large, fine, bold flower, very attractive.

Turner's John Leech.—A rich crimson, with bright yellow paste, very fine.

Turner's King of the Belgians.—A fine bright crimson, with very bright yellow paste, and very circular ; extra fine.

Turner's Napoleon III.—A fine rich crimson, very fine.

Turner's Sydney.—A fine large flower, very smooth, and a fine large truss ; fine.

Turner's Slough Rival.—A fine large flower, shaded with lilac, very free and distinct.

Auriculas should now be repotted, if that operation has not been already done. At the same time, the offsets should be taken off and placed around the edge of some small pots, putting them under hand-glasses for a short time, until they have sufficiently drawn root to bear exposure. It is a great mistake to put *Auriculas* into too large pots ; this I have fully proved. In a large collection which recently came into my hands, the plants, large and small, had without any discretion, been all potted alike in 32-sized pots ; and the result of this overpotting is that many of the weaker ones have dwindled away, while the strongest of them have produced but very small blooms, with the trusses scarcely elevated above the foliage. The *Auricula* is a plant that does not make a large quantity of roots, and therefore small pots suit it best ; a 5-in. or 48-sized pot is large enough for the strongest plant.

Another very important point in the culture of these plants, is the soil. Old rotten cow-dung has generally been considered an excellent thing for Auriculas ; but I have determined to abandon the use of it, in consequence of its sometimes containing a most destructive small white grub, which secretes itself under the soil, and unobserved will divest the plant of every root it has, thus causing it to become sickly and to die away gradually. I have sometimes found these grubs to be very numerous, and was obliged on one occasion, in the spring, to shake out and repot every plant in order to get free from this most troublesome pest. The following compost will be found very suitable for these plants, viz., 4 bushels of good mellow loam, 1 bushel of old rotten leaf-mould, 1 bushel of very old rotten stable manure, 1 bushel of peat, and half a bushel of silver-sand.

After the plants are repotted, place them in a shady situation ; keep them moderately watered during the summer months ; and always allow them to have as much air as possible, at the same time protecting them against heavy rains. They should be divested of all decaying foliage, and should green-fly attack them, this should at once be brushed off, since cleanliness is a very essential point towards keeping the plants in a growing, healthy state.—JOHN BALL, *Slough*.

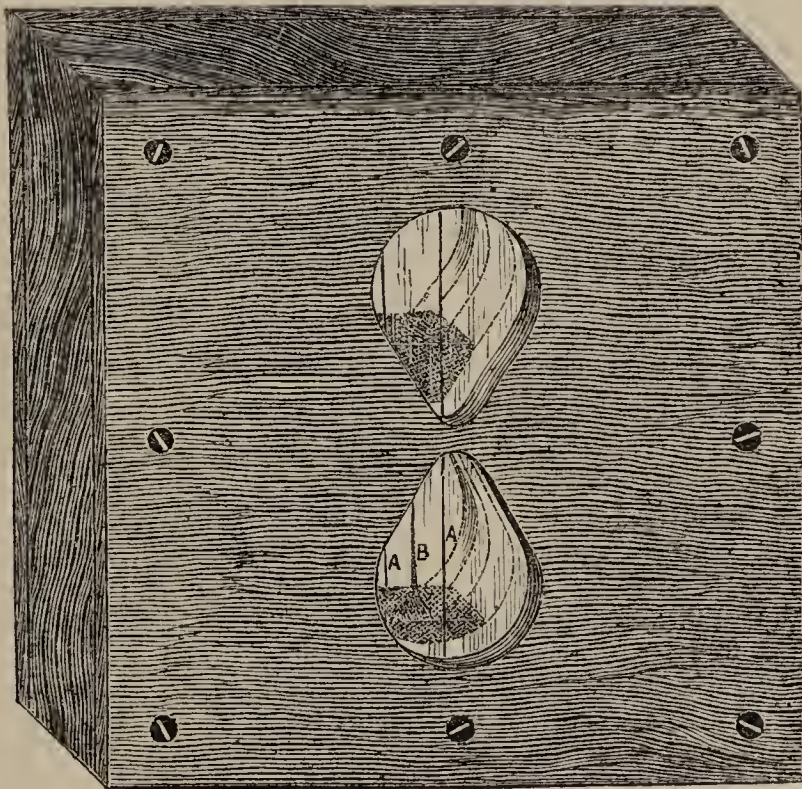
FORSYTH'S LEVEL AND PLUMB-RULE.

THE science of Horticulture hath its schemes, and the practice of that ancient craft requireth tools. This instrument for levelling and plumbing belongs to the practical department ; and I will now name the several uses to which it may be turned. No article has been found so serviceable as a prop for tall-growing flowers, such as Dahlias, Hollyhocks, and the like, as a good square oaken stake, painted dull green, so as not to be conspicuous. What concerns the present subject is the driving or planting of these stakes, so as to have them parallel to the curves of the beds, and at the same time perfectly upright from east to west, and from north to south. If any one has watched a carpenter setting up a pair of square gate-posts, thereon to hang a gate so as to swing freely and close accurately, he will understand the difficulty of setting up some thousands of square poles on a piece of pleasure-ground, where highly educated persons are accustomed to look for beauty, and are not likely to brook deformity. Were the stakes to be set up indoors, or in calm sunshine, the mason's plumb-rule would do it to perfection, but the wayward wind bloweth not only where it listeth, but when it listeth, and therefore the plumb-line is seldom a safe guide out-of-doors. The usual way is to carry a plummet, about the size of a game-fowl's egg, with a fine line, such as silk-fishing line, attached.

In planting tall trees the plumb-line is needed as well as in planting stakes, as no guess can be so reliable as the plumb-line. My level and plumb-line is, like the spirit-level, covered in from the weather, and is a veritable sand-glass. Its action is instantaneous, and never doubtful, like the spirit-level, where we have to wait for the air-bubble to stand midway between the rise and fall before we can tell how the land lies. It is also made continuous by turning it as soon

as the sand has passed through in one direction. Some 20 years ago I presented one of these instruments for plumb-line and level work to the late Dr. Lindley, but as I had more important business on hand samples only were made, and thus the thing has slumbered for about 20 years.

The principle was new in mechanics, as no one had ever used sand obeying the laws of gravitation for such a purpose, until I invented this pocket-level and plumb-line to meet the want which I have described. Extreme accuracy is not wanted, but quick action and little bulk or weight are of the greatest import-



FORSYTH'S LEVEL AND PLUMB-RULE.

ance; just as we look at a clock or a watch for the time of the day, and feel satisfied with an approximation, although our parish clock on the church, or our pocket five-guinea Geneva, does not always give us Greenwich time—even if it did, that would not be our time if east or west of London. The sand-line is extremely sensitive, and quite clear, forming a steady stream of uniform breadth; and falling, as it does, between two lines marked on the front and back of the instrument, it resembles three hairs or threads all in a line, when the sides are upright and the top and bottom level. Its extreme simplicity is therefore one of its greatest merits.—ALEXANDER FORSYTH, *Salford*.

FRUIT CULTURE.—JUNE.

ALL trees should now be carefully attended to. *Apricots*, as stated last month, are a very thin crop in this neighbourhood. *Peaches* and *Nectarines* are also a light crop: my statement last month that they were a good crop was premature; from the quantity of blossom on the trees, I expected the crop would be a good one, but much of the blossom, on the wood that was not properly ripened last season, was weak, and fell off without setting. On trees where the wood was well matured there is a fair crop of fruit. This

shows the necessity, if we are to expect fruit next season, of paying every attention to the young shoots, so that they may complete their growth and get properly matured; for if, as remarked last month, they are injured or destroyed, either by frosts or insects, the later growths seldom get properly ripened, and hence it is vain to expect fruit the following season. Keep the trees thin of wood; train and nail or tie in the young shoots as they require it, and look sharply after insects. Attend regularly to the thinning and stopping of the young shoots of *Pears*, *Apples*, *Plums*, and *Cherries*. Thin out the young wood from the centre of *Gooseberry* and *Currant* bushes; also from *Raspberry* stools. Give *Strawberry* plantations a good soaking of water, and if not already done, lay some straw between the rows, to keep the fruit clean. Lay runners in pots for forcing.

IN-DOORS.—Maintain a steady bottom-heat of about 85° to *Pines*; give all plants swelling off fruit liberal supplies of liquid manure, and admit air freely in favourable weather; keep the day temperature at from 75° to 85° , with a rise of 10° by sun-heat. Shift at once, if not already done, all plants intended for autumn and winter fruiting; and shift succession plants when they require it; give them a good bottom-heat, plenty of air and light, and you will get good strong stiff plants, which will be almost certain, under favourable circumstances, to bear fine fruit. Keep all ripe *Grapes* cool and dry, otherwise they will soon shrivel. Maintain a moist atmosphere in all houses where grapes are swelling, and if the weather be cold, keep up moderate fires. Attend to the timely thinning of the berries in late houses, and keep all laterals well stopped; admit air early in the mornings, and close up in good time in the afternoons. Give the early *Peaches* abundance of air, and shade to retard the fruit if it ripens faster than it is used; when all the fruit is gathered, attend to the ripening of the wood; keep the inside borders well watered, use the syringe freely, and give abundance of air both day and night; keep also a moist atmosphere in houses where fruit is swelling; look occasionally over the trees, and remove all shoots not wanted next year. Water should not be altogether withheld from *Fig trees* having ripe fruit, as it may endanger the second crop; when the first crop is all gathered give the borders a good watering, and to plants in pots and tubs give plenty of liquid manure; syringe freely to keep down red-spider. See that *Cucumbers* and *Melons* have a good bottom-heat; keep the shoots thin, water freely, and give air abundantly in fine weather; put some pieces of slate or glass under *Melons*, to keep them from contact with the soil.—M. SAUL, *Stourton*.

NOVELTIES, ETC., AT FLOWER SHOWS.

THIS record opens with the Meeting of the Royal Horticultural Society, on May 4th, on which occasion one of the leading novelties, shown by Messrs. Veitch and Sons, was a species of *Pentstemon* (F.C.C.), from the Rocky Mountains, supposed to be *P. Menziesii*, which had been found on the top of this range of mountains by Mr. Robinson. It is reported to possess a low, spreading growth, lying as it were on the ground, and forming dense tufts about

2½ in. in height ; and it bears very attractive lilac-rose-coloured flowers. *Alpine Auriculas* : *Colonel Scott* (F.C.C.), and *Mercury* (F.C.C.), represent two of the fine new varieties in the hands of Mr. C. Turner ; both have rich maroon-purple edges, and pure golden centres, and are highly attractive. *Show Pansies* : *Prince of Wales* (F.C.C.), yellow ground, with belting of glossy black, and a dense well-formed blotch, good form and substance ; *Mrs. Eyles* (F.C.C.), white ground, with belting of shaded purple, and well-defined dark blotch ; and *Fancy Pansy Crimson Beauty* (F.C.C.), shaded glossy crimson, a richly coloured flower, were contributed by Mr. H. Hooper, of Bath. *Azalea Fanny Ivery* (F.C.C.), colour salmon-red, with crimson spots on the upper part of the flower, was shown by Messrs. Ivery and Son, of Dorking. Messrs. E. G. Henderson and Son exhibited *Bouvardia longiflora flammea* (F.C.C.), a charming rose-coloured variety, distinct and attractive ; while from Messrs. W. Rollisson and Sons came *Dracaena lentiginosa* (F.C.C.), of palm-like habit, with long narrow leaves of a bright shining brown colour, and a decided acquisition.

The third Spring Show of the Royal Botanic Society, held on the 8th of May, brought together a few novelties of some interest. Certificates were given to the following plants :—*Croton lacteum*, a handsomely marked species, shown by Messrs. Veitch and Sons. *Iris iberica var. Perryana*, a curiously-marked form, differing from the species in that it had no yellow in the larger segments of the perianth ; *Funkia japonica aurea*, the leaves of which were wholly pale yellow ; handsome and distinct ; and *Funkia Fortunei*, the leaves of which appeared to be tinted with blue, from being deep green and densely glaucous—these came from Mr. T. S. Ware. *Pimelea Hendersoni alba*, an acceptable white flowering variety, to all appearance a little more compact in growth, and very free ; *Pelargonium Emperor*, a hybrid Ivy-leaved variety, with violet-rose flowers, the centres tinted with carmine ; and *Pelargonium Elegantissimum*, a scented plant of compact habit, the small leaves regularly edged with pale lemon, making it a very effective pot plant—these were shown by Messrs. E. G. Henderson and Son. *Pelargonium Prince Charlie*, a giant zonal variety, with pale scarlet flowers of large size and fine shape, from Mr. B. Porter, Isleworth. *Variegated Pelargoniums Guinever* and *Lord Bacon*, the former having pure white, the latter carmine-tinted flowers, in each case the green leaves being edged with white ; both from Mr. W. Paul. *Azalea (mollis) Alphonse Lavallée*, a finely-formed variety, with tinted orange-brown flowers ; from Messrs. Lane and Son. *Intermediate Stock Purple Queen*, with somewhat loose spikes of peach-lilac or mauve flowers, but a distinct and telling colour ; shown by Mr. Williams.

At the meeting of the Royal Horticultural Society, on May 18th, the novelties were not so numerous as at the previous meeting of the Regent's Park, yet well worthy of record. A leading feature was a group of Perpetual Carnations and Picotees, from Mr. Turner, several of them seedling varieties of his own raising. *Marchioness of Westminster* (F.C.C.), bright rose, a very fine self flower ; *Princess Christian* (F.C.C.), pale pink, deeper in the centre ; and *Empress*

of *Germany* (F.C.C.), white, a very fine variety, were the most meritorious. *Azalea grandis* (F.C.C.), from the same exhibitor, had salmon-red flowers of large size, and very showy. Mr. Turner also exhibited large-flowering *Pelargoniums*: Foster's *Chancellor* (F.C.C.), with violet-rose lower and dark top petals, fine and showy; and Foster's *Naomi* (F.C.C.), lower petals rosy purple, pencilled and blotched with black, and dark top petals. *Gloxinia Cecilia* (F.C.C.), white, with deep shaded crimson throat, a bold and attractive erect-flowering variety, came from Mr. D. S. Thompson. A fine new pale mauve-coloured pyramidal *Stock*, named *Mauve Beauty*, having wallflower-leaved foliage, and which had been treated as an intermediate, was shown by Mr. R. Dean, Ealing, and awarded a cultural commendation; the flowers are very double, and the spikes bold and massive.

The first great show of the Royal Botanic Society was held on May 22nd, and one of its leading features was six massive *Azaleas*, shown by Mr. Neighbour, gardener to Sir W. Clayton, Bart., Great Marlow; the group included a magnificent plant of *Extranii*, which was, perhaps, one of the finest examples ever exhibited. *Tree Carnations* *Marchioness of Westminster*, *Queen of the Belgians*, white, with slight stripes of pink, large, and very full; and *Caliban*, white, heavily flaked with rose, received Certificates of Merit; as did the new scarlet forcing *Pink Coccinea*, all shown by Mr. Turner. The same award was made to Mr. R. Dean for his *Pyramidal Stock*, *Mauve Beauty*, shown in fine condition; also to Messrs. E. G. Henderson and Son, for *Variegated Zonal Pelargoniums* *Enchantress* and *Golden Eagle*, the leaves of both edged with gold, and having handsomely vandyked zones. Among the new plants was a fine large-flowered compact-habited *Iberis*, named *Pruitii*, having the flowers tinted with lilac, a very distinct and handsome hardy plant; this received a Certificate.—R. D.

THYMUS CITRIODORUS AUREO-MARGINATUS.

AS a winter and spring bedding plant this new Thyme cannot be too highly spoken of. From the great demand there is at present for anything that will add to the beauty of the flower-garden in the dull winter months, it will be of great advantage to all who go largely into such work—and there are few who do not, less or more, engage in it now. It makes a beautiful edging, being of an erect but branching habit of growth, with obovate leaves, which are of a bright green in the centre, and have a broad, rich, golden-yellow edge. When in quantity and as seen on looking along a line of it, the under sides of the leaves have a rich crimson tint, which makes it very effective. It is quite hardy and of easy propagation, and if grown on banks, or rockwork, or amongst *Aubrietias*, and many other spring things, it will look well. We are so impressed with a small line here that we intend making as much as possible before another autumn. It is also very fragrant, like the sweet lemon thyme.—A. H., Thoresby.

NIEREMBERGIA VEITCHII.

WE have in this South American plant, introduced some years since, from Tucuman by Messrs. Veitch and Sons, a charming hardy herbaceous perennial, of prostrate habit, with slender branching stems, eight inches to a foot long, the lower leaves obovate-oblong or spatulate, and



NIEREMBERGIA VEITCHII.

opposite, the upper ones alternate and linear. The flowers are pale lilac, produced in the axils of the upper leaves, with a funnel-bell-shaped calyx, and a broadly bell-shaped corolla, spreading into five wide shallow lobes, and having a slender white tube from a half to three-quarters of an inch long.

It is a lovely little plant for the rock-garden, and is of easy culture, flowering in great profusion, and continuing for many months in flower. The Messrs. Veitch, to whom we are indebted for the illustration, describe it as perfectly hardy, and recommend it both as a dwarf border plant and for rockwork.—T. M.

FLOWER-GARDEN MANAGEMENT.—JUNE.

THE planting out of the summer bedding and other plants should now be pushed on with energy, and be completed as soon as possible, in order that the flower garden may have a neat and orderly appearance. Every necessary attention must be paid to the plants for a few weeks after planting. Keep the surface of the beds well stirred up among them, and in dry weather water well everything that needs it. Baskets and vases should now be filled with suitable plants. Attend to the regulating and tying up of climbing plants. Stake and tie up *Dahlias* and *Hollyhocks*, and attend to the tying up of all plants requiring support. Thin out *Hardy Annuals*, which are generally allowed to grow too crowded; sow some more for late blooming. As soon as the leaves decay, *Ranunculuses*, *Anemones*, *Hyacinths*, *Tulips*, &c., should be taken up, dried, and put carefully away. Continue to propagate *Perennials* of all sorts. Sow *Brompton* and *Intermediate Stocks* on north borders. *Roses* will now require attention; commence budding as soon as the stocks and buds are fit; look frequently over the plants, remove all weak and bad shoots, and keep them clear of insects. They are very liable to the attacks of green-fly and caterpillars; fumigating or syringing with tobacco-water will clear them of green-fly, but caterpillars must be carefully hand-picked and destroyed. Attend regularly to the rolling of walks, and the rolling and mowing of lawns, and endeavour to maintain as complete an appearance of polish as your means will allow.

IN-DOORS.—Plant houses are often so crowded, that the season when many things can be removed out-doors with safety, is generally welcomed. After the middle of the month all the large specimens of the more vigorous and hardy kinds of *Hard-wooded Greenhouse plants* may be removed out-doors to a sheltered situation, where they will be shaded from the mid-day sun. The plants should be well attended to as to watering, and all that require it should be shifted. The more tender, delicate plants should remain in the houses, and should be set thin on the stages, and have abundance of air at night as well as during the day. The young stock should be kept in pits and frames, and encouraged to grow; give plenty of air during the day, and shade in bright sunshine; water in the afternoons, and give the plants a sprinkling overhead occasionally. Shift into large pots all plants that require it; many of those shifted early in the season will now want another shift. Guard against insects by timely fumigation, and attend regularly to the stopping, training, and tying-out of the young shoots. Pay regular attention to the wants of *Soft-wooded plants* intended for autumn decoration. Most of them should now be shifted into the pots they are intended to flower in. Pot off and shift seedling *Cinerarias*, *Primulas*, &c., as they require it.—M. SAUL, *Stourton*.

GARDEN GOSSIP.

NEITHER *Vegetables* nor *Salads* should be washed until they are just about to be cooked or eaten. Potatos, Carrots, Turnips—all lose flavour quickly after being washed; while in summer, water in contact with Cauliflowers and Cabbages speedily becomes tainted, and thus destroys their freshness and flavour. Salads suffer still more. If washed at all, it should be done only just before they are dressed, and they should be dried immediately. Lettuces if quite clean, are best left unwashed; if washed, the operation should be done quickly, and the water instantly shaken out, and the leaves dried with a clean cloth. Instead of this, they are too often cut and washed in the morning, and pitched into water, in the scullery sink, until wanted. The best plan of gathering vegetables, is simply to remove superfluous earth by seraping or rubbing, and the rough tops or leaves by cutting; enough tender leaves may still be left on Cauliflowers and Broccoli to overlap the flowers. Salad should be sent in from the garden with most of the outside leaves and main root on; for the tender leaves are easily tainted and injured by exposure, and if the main root is cut off sharp, much of the juice oozes out at the wound.

— It has been proposed in a contemporary, by Mr. G. Deal, to convert *Garden Edgings into Watering Apparatus*. The arrangements proposed are these:—To fix in an obscure corner of the garden a large open tank, elevated upon iron columns, or brick piers, of sufficient height to cause the water to flow freely and with force to any required part of the garden. The pipes charged with the disposition of the water to be of cast-iron, fixed above the ground surface, and around the whole or such portions of the respective beds, in such a manner as to form an edging. The diameter of the pipes to be about $2\frac{1}{2}$ inches, and the design a plain round of the ordinary type, or cable, octagon, square, or triangular, in lengths of about 6 feet, with a flange, either plain or perforated, for partly sinking into the earth, so as to form a proper separation between the garden soil and the gravel of the walk. Each length to be connected together by means of a separately-formed socket-joint standard, surmounted by a finial ball or other device for ornament. Every fifth or sixth of these standards, as may be convenient, to be fitted with a screw nozzle hydrant cock suited to receive elastic hose for distributing the water. Such of those pipes as are used under the crossings or junctions of the walks to connect the edging pipes into one complete system may be of ordinary wrought iron, and the whole of the pipes galvanized, for the prevention of oxidation. Mr. Deal sets down the following as the advantages of this plan:—(1.) A simple and economical mode of constructing a durable garden edging, combined with an efficient apparatus for watering. (2.) A great saving of time and labour, also facilities for increased daily watering without extra hands. (3.) The aëration of the water by exposure in the open tank, while that in the apparatus would become tepid by the influence of the sun upon the iron-pipe edging. (4.) The apparatus can be converted into a liquid manure-distributor. To prevent injury by frost, the pipes need only be allowed to run themselves empty at the end of the 'watering season.'

— THE disposal of *Town Sewage* may probably be looked upon as a settled question. General Scott, the architect of the Albert Hall, and the secretary of the International Exhibition, has discovered a means of converting it into cement. The process is now being carried on at Ealing. A mixture of eight parts of lime and one of clay is thrown into the sewer near one end of the town, and is allowed to run down with the sewage to a piece of land about half a mile distant, where it passes into a long tank, and the solid matter having been deposited, the water passes off almost clear and free from smell. The deposited sewage, which looks like mud, is taken from the tank to a drying place, not unlike those used in the Cornish china-clay works; there it is dried by a flue, is then pugged in a pugging-mill, and passed through a brick machine. The bricks are finally placed in a kiln and calcined, and the result is a hydraulic cement, equal to any Portland cement in the market, and saleable at a considerably lower price. By a little alteration in the precipitating ingredients, other cements may be obtained. It has been found that the sewage contains such a large quantity of hair, rag, straw, and other combustible substances, that it supplies to a large extent its own fuel, and coke and inferior coal may be used in the kiln. It is expected that means will be found to extract the ammonia which passes off in the water.

— THE following method of *Making Soot-Water* has been recommended : —Sift through a fine sieve enough soot to fill a 4-gall. watering-can, or other vessel ; in this vessel gradually and thoroughly mix the soot with water ; then pour the mixture into a larger receptacle, filling that up with water, taking care that the soot should be evenly mixed in the water. Then gently push all the scum off the surface with a new besom, and sift fresh lime over the surface of the mixture. This lime will carry every impurity quickly to the bottom. It is better to use pond-water than pump, and rain-water is better than either. If not wanted for a fortnight the mixture will clear itself, but if wanted sooner the lime should be used. This soot-water may be employed for syringing *Pelargoniums* and other plants, many of which seem to enjoy it.

— At one of his recent lectures at South Kensington, Professor Dyer, after observing that the bright *Tints of Flowers* are to a considerable extent shared by the young growing shoots of plants, and that Mr. Herbert Spencer had even suggested that in the often bright colouration of young foliage we see the origin of the colours of flowers, went on to say, "The leaves of a young shoot are rudimentary, and so in a sense are the leaves which make up a flower ; both consume prepared nutriment, both absorb oxygen, both are often brightly coloured. In the former case, a time for sober work—starch manufacture—comes, and the gay colouration is exchanged for green. In the latter case, the leaves are never called on to do work of that kind, and they best serve the interests of the plant by displaying to the last the vividness of their tints ; for it can hardly now-a-days be doubted that it is from no mere gayness, no mere benevolent display of beauty, that plants in this way delight us, but simply because it brings about with the greatest certainty the transference of pollen from one flower to another, which seems an essential condition to the vigorous perpetuation of the race." Insects are attracted by the tints of flowers, the colour appearing to suggest by association the presence of nectar, and access to this is generally so barred in the real flower that the insect, before it satisfies its wants, gets smeared with pollen, which it carries to other plants.

— ONE of the novelties of the French gardens is a *Clematis Viticella nana*, which was raised at the Paris Museum. Its flowers resemble those of the species, but are larger, and of a rosy lilac. The plant is only from 16—20 in. high, and is not only very floriferous, but perpetual-blooming. In fact, its shoots as they are developed are terminated by flowers, in such a manner that the plant is almost constantly provided with them. This dwarf *C. Viticella*, observes M. Carrière, shows us how new characters appear—consequently how species are formed. Proceeding from a climbing plant which flowers but once, this is dwarf and not climbing, and its flowers are brought forth in succession during the summer.

— A NEW manure for Fruit-culture has been brought forward under the name of *Cancerine*. It consists of a peculiar species of crab, with a horny, not calcareous, shell, and which occurs abundantly on the shores of New Jersey. The unfortunate crustaceans are speared, thrown into heaps, crushed, kiln-dried, and ultimately ground to powder. The horny shell contains much ammonia, hence its value as a manure.

— THE French florists have, it is said, succeeded in obtaining a *Double White Zonal Pelargonium*. This prize was raised by a nurseryman at Toulouse, who has disposed of his stock to M. Boucharlat, of Lyons. The plant in question is a sport from *Beauty*—a single-flowered white variety with a pale flesh-coloured centre.

Obituary.

— PROFESSOR HUGO VON MOHL died at Tübingen on April 1. He was Professor of Botany and Director of the Botanic Garden at Tübingen, as well as one of the editors of the *Botanische Zeitung* ; he was also a copious and most accurate writer on vegetable anatomy and physiology, his publications in this department of botanical science being of the highest authority.

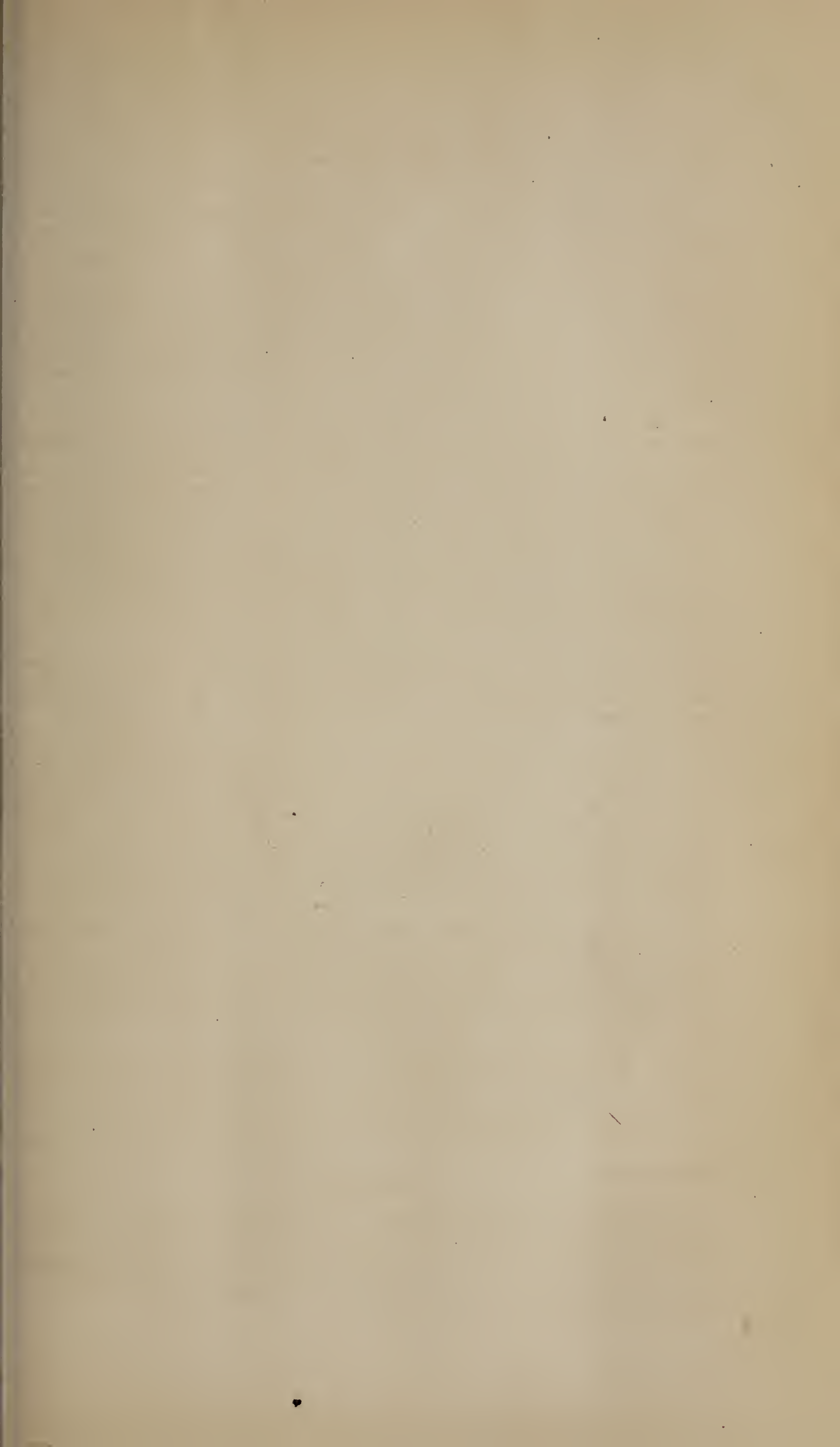




FIG.
Negro Largo.

NEGRO LARGO FIG.

WITH AN ILLUSTRATION.

SOME time since (1869, p. 5), we invited the attention of fruit-growers to this fine addition to our cultivated Figs, which was imported and brought into notice by Mr. Fleming, the talented gardener at Cliveden, under whose superintendence, moreover, modern spring-gardening, as we have come to call it, made its first forcible impression on the mind of the gardening public. The little attention paid to figs a few years back, in all but the most extensive gardens, was a matter of some surprise, but we are pleased to see that more attention has been lately paid to them—a result perhaps, in some degree, attributable to the excellent examples of Pot Figs which Mr. Barron has from time to time produced at Chiswick, and which have, on some occasions, made their appearance at public exhibitions.

Mr. Fleming informs us that he “received the Negro Largo Fig, six years ago, along with nineteen others, from a noted grower in the South of France. It is robust in habit, free-growing, and a wonderful bearer, moreover, forcing well. It is peculiar in ripening, as sometimes we had six fruits ripe at one time on the same shoot; this was the case with the fruit from which Mr. Macfarlane made the drawing; and none of them were much below 4 oz. in weight.”

This noble-looking, high-class Fig is one of the largest in size, oblong-obovate, or pyriform; the skin jet black, marked with longitudinal ribs; the eye open, and generally when ripe with a globule of syrup; and the stalk short. The flesh is pale red, very tender, and abounding with a rich, highly-flavoured juice. When highly ripened, Dr. Hogg observes, the flesh and skin together become quite melting, and form a most delicious sweetmeat.

“We have always,” Mr. Fleming remarks, “grown it in pots, but I have every reason to believe from its productive habit it would produce very much larger crops and fruit, if planted out. There can be no doubt it is the finest black Fig in cultivation. Several of the other varieties imported with it are excellent for early forcing, coming in at least three weeks before Lee’s Perpetual and other well-known varieties.”

Mr. Macfarlane’s fine representation shows it to be as handsome as it is excellent. We believe Messrs. Veitch and Sons will shortly be in a position to distribute plants.—T. M.

FOOD FOR FRUIT-TREES.

PERHAPS no practice has been more universally decried of late years than that of manuring the ground for fruit-trees. To think, speak, or write of this, is to be classed with the effete and irrational practitioner of the olden times. It needs some courage to add that one of the weakest links in the chain that encircles our modern practice is this incessant prejudice against everything old in gardening. We talk and write of the past as if it were

a series of blunders to be ashamed of,—a Book of Acts to be shunned. I contend that it is nothing of the sort. It is a guide-book, which, studiously read by the light of the present, would be of value, and prove a substantial help to us in our present practice. No, no, the past is not a rotten ladder, to be kicked down as utterly useless, but rather a spring-board, with force and energy enough left in it to help us to better, higher things in the present and the future.

All this is *à propos* to the subject of Food for Fruit-Trees. Our predecessors believed in that. Whatever else they did or undid, they fed their trees with no niggardly hand. “Yes,” answers the tyro, triumphantly, “and a rare mess they made of it. They sent the strength of their trees into fishing-rods, instead of luscious fruits; do you wish to do likewise?” That does not follow. Neither does it follow that they were wholly wrong in feeding their fruit-trees. True, they went to excess; but the food was good, and their reasons for giving it sound. They erred, as most of us do, by grasping only some, instead of *all* the facts. They saw one, and that a very important part of truth—this,—as we sow, we shall reap. Food in abundance is the forerunner of a heavy harvest. That was often delivered in bundles of wood, because they lacked the skill of converting the growing force of the tree into fruit. But was the strength borne of the manure therefore wrong, and fraught with mischief? By no means. The strength was good; like a young colt, it simply needed breaking-in, to make it run quietly in the ways of fertility.

I fear we moderns, like unskilful trainers, have often broken the spirit and stamina of our trees in our rage for fertility. From the excessive over-feeding of fruit-trees, the modern mind horticultural has rebounded to no-feeding. The consequence is exhaustion, ending in crippled forms and premature deaths.

Feeding is, in fact, of far more importance than ever. The trees have much more to do, as they begin fruit-bearing at a much earlier age. Men used to talk of planting fruit-trees for their children: now they expect to plant maiden plants one season, and eat of them the next. This precocious fertility exhausts the youthful tree, and stops or stunts its growth. And as if this were not exhaustive enough, the tree can hardly make two leaves in succession without cruel pinching and reckless stopping. Or if it escapes the thumb-screw on its tender shoots, and ventures to make wood of medium size and strength, the spade or the knife is sent through its best roots in winter. All this results in a load of fruit, far beyond the vital powers of the tree. With many growers the more fruit the better. No matter how weak the wood, how small the leaves, they only see those fruit,—every branch weighted, each twig filled, and every bud for next year almost a fat fruit-bud.

All these manifestations delight the ends of the pomologist. And justly so. But each of them is a cry for food, as well as an earnest of present and coming harvests. Feed the roots well with partially decomposed manure as mulchings, liquid manure, and house sewage of all kinds. The tree needs it all to bear the strain which our artificial treatment has put upon it. No fear of such trees

running to wood under such a feeding regimen. There is much greater danger of their being ruined through weakness. In fact, that is the rock ahead of our modern modes of fruit-growing. We multiply roots, branches, fruit, to the uttermost limits, on the smallest area in the shortest space of time. Fruit-culture is travelling by express train. To avoid a break-down, the manure-truck must bear it company. At present many have banished the latter off the lines of growth entirely, but those who have still some faith in it, allow it to drag along days, weeks, it may be months, behind the growing trains. Is it any wonder that stoppages, shunts, failures occur under such an arrangement? The strength of plants subjected to the constant drain of excessive fertility, can only be kept up by high and liberal feeding, and the sooner this is generally acknowledged by fruit-growers, the better for their own reputation and the safety of the trees. To the old cries already raised in your columns—No rivals to the roots of fruit-trees, I would add the new one of—No exhaustion of their larders.—D. T. FISH.

ELECTION OF FRUITS FOR AMATEURS' GARDENS.

THE list we now print is a sequel to that given for the "small gardens of cottagers" at p. 121. The arrangement is the same, and the numbers after the names indicate the same contributors, but the selection is somewhat more extensive, to suit the "larger gardens of amateurs":—

Votes. BEST 6 PEACHES.

12. Bellegarde, 1, 2, 4, 5, 6, 9, 10, 11, 12, 14, 15, 16.
12. Royal George, 1, 2, 3, 5, 6, 7, 8, 9, 10, 12, 14, 16.
11. Barrington, 1, 2, 4, 6, 7, 8, 9, 12, 14, 15, 16.
10. Grosse Mignonne, 2, 3, 4, 5, 7, 8, 9, 10, 11, 12.
9. Noblesse, 1, 4, 5, 7, 8, 11, 12, 14, 16.
8. Walburton Admirable, 2, 5, 6, 9, 10, 11, 14, 16.
6. Early York, 1, 2, 4, 6, 7, 10.
3. Malta, 3, 5, 15.
2. Acton Scott, 8, 12.
2. Princess of Wales, 3, 15.
2. Rivers' Early York, 3, 15.
2. Violette Hâtive, 8, 10.
1. Belle Beauce, 6.
1. Cooledge's Favourite, 4.
1. Dr. Hogg, 3.
1. Early Alfred, 14.
1. Early Beatrice, 15.
1. Early Grosse Mignonne, 16.
1. Early Victoria, 11.
1. Late Admirable, 7.
1. Premier, 11.
1. Stirling Castle, 9.
1. Téton de Vénus, 1.

* * No. 13 did not vote.

BEST 6 NECTARINES.

13. Elruge, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 15, 16.
11. Victoria, 1, 2, 3, 5, 8, 9, 10, 12, 14, 15, 16.

11. Violette Hâtive, 3, 4, 5, 6, 8, 9, 10, 11, 12, 14, 16.
8. Pitmaston Orange, 3, 4, 5, 8, 10, 12, 14, 15.
7. Downton, 1, 5, 7, 9, 10, 11, 15.
6. Pine Apple, 2, 3, 7, 8, 11, 15.
5. Balgowan, 1, 2, 6, 9, 16.
4. Murrey, 7, 10, 11, 14.
4. Roman, 4, 7, 12, 14.
3. Hardwicke, 6, 9, 16.
3. Rivers' Orange, 6, 7, 16.
2. Early Newington, 1, 4.
2. Hunt's Tawny, 2, 4.
2. Old Newington, 3, 12.
2. Prince of Wales, 11, 14.
2. White, 1, 8.
1. Albert, 6.
1. Albert Victor, 5.
1. Bowden, 2.
1. Lord Napier, 15.

* * No. 13 did not vote.

BEST 6 APRICOTS.

18. Moorpark, 1 (two), 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 14 (three), 15, 16.
10. Hemskirk, 2, 3, 4, 5, 7, 9, 11, 12, 14, 16.
10. Kaisha, 1, 2, 4, 5, 6, 7, 9, 10, 14, 15.
6. Orange, 1 (two), 4, 8, 11, 12.
5. Large Early, 4, 6, 7, 9, 16.
5. Peach, 3, 4, 5, 10, 16.
5. Royal, 5, 9, 10, 11, 15.
4. Breda, 2, 3, 8, 12.
4. Shipley's, 2, 3, 11, 12.
3. Large Red, 1, 5, 16.
3. Musch Musch, 8, 9, 12.

3. St. Ambroise, 6, 10, 15.
2. Alsace, 6, 10.
2. Early Moorpark, 15, 16.
2. Frogmore Seedling, 7, 14.
1. Angoumois Hâtif, 2.
1. Brussels, 3.
1. Early Peach, 6.
1. Frogmore Large, 11.
1. Oullins Early Peach, 15.
1. Pine-Apple, 7.

* * No. 8 only voted for four. No. 13 did not vote.

BEST 6 CHERRIES.

12. May Duke, 1, 2, 3, 4, 5, 7, 8, 10, 11, 12, 14, 15.
11. Black Tartarian, 1, 2, 4, 6, 8, 9, 10, 11, 14, 15, 16.
11. Morello, 1, 2, 3, 6, 7, 8, 9, 10, 12, 15, 16.
9. Elton, 2, 3, 7, 8, 9, 10, 11, 14, 15.
7. Bigarreau Napoléon, 2, 4, 5, 6, 10, 11, 14.
5. Bigarreau, 1, 6, 9, 12, 16.
5. Black Eagle, 1, 5, 7, 11, 14.
4. Frogmore Early Bigarreau, 6, 7, 11, 16.
2. Bedford Prolific, 15, 16.
2. Black Heart, 9, 12.
2. Early Purple Gean, 3, 15.
2. Governor Wood, 10, 12.
2. Kentish, 7, 8.
2. Knight's Early Black, 4, 16.
2. Reine Hortense, 3, 14.
1. Baumann's May, 12.
1. Belle d'Orléans, 9.
1. Bigarreau Jaboulay, 5.
1. Burghley Seedling, 8.
1. Early Bigarreau, 4.
1. Florence, 5.
1. Jeffrey's Duke, 6.
1. Late Duke, 3.
1. Nouvelle Royale, 2.
1. Royal Duke, 4.
1. Tradescant's Heart (Large Black Bigarreau), 5.
1. White Heart, 1.

* * No. 13 did not vote.

BEST 6 RASPBERRIES.

15. Fastolf, 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 12, 14 (two), 15, 16.
15. Yellow Antwerp, 1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 14 (two), 15, 16.
13. Red Antwerp, 1, 2, 3, 4, 5, 7, 8, 9, 10, 12, 14 (two), 16.
10. Carter's Prolific, 3, 5, 6, 7, 8, 9, 11, 12, 15, 16.
9. Prince of Wales, 2, 3, 4, 8, 9, 10, 11, 12, 15.
8. October Red, 1, 3, 4, 5, 6, 7, 15, 16.
4. October Yellow, 5, 7, 15, 16.
3. Belle de Fontenay, 9, 10, 12.
3. Northumberland Fillbasket, 5, 8, 11.
2. Barnet, 1, 12.
2. Rogers' Victoria, 4, 9.
1. Kew Perpetual, 11.
1. Large Monthly, 1.
1. Lee's Prolific, 6.
1. McLaren's Prolific, 2.

1. Rivers' Autumn Black, 10.

1. Rivers' Double Bearing, 2.

* * No. 6 only voted for five. No. 12 voted for seven. No. 13 did not vote.

BEST 12 APPLES.

13. Blenheim Pippin, 1, 2, 3, 4, 5, 7 (two), 10, 11, 13, 14, 15, 16.
13. Cox's Orange Pippin, 1, 2, 3, 4, 5, 6, 7 (d), 10, 11, 13, 14, 15, 16.
10. Dumelow's Seedling, 2, 3, 5 (k), 6, 8, 9, 10, 13, 14, 16.
10. Lord Suffield, 1, 2, 3, 4, 7, 8, 12, 13, 14, 16.
10. Ribston Pippin, 1, 4, 7, 8, 9, 10, 13, 14, 15, 16.
8. King of the Pippins, 3, 7 (d), 8, 9, 11, 12, 13, 14.
7. Kerry Pippin, 2, 4, 5, 6, 7 (d), 10, 14.
7. Scarlet Nonpareil, 2, 4, 6, 8, 10, 11, 12.
6. Alfriston, 1, 3, 6, 12, 14, 16.
5. Cox's Pomona, 2, 4, 9, 11, 15.
5. Yorkshire Greening, 2, 3, 8, 12, 13.
4. Court of Wick, 3, 4, 9, 13.
4. Margil, 1, 9, 15, 16.
4. Reinette du Canada, 1, 5 (k), 7, 15.
4. Sturmer Pippin, 5, 6, 7, 15.
3. Claygate Pearmain, 8, 9, 11.
3. Court-pendu-plat, 1, 8, 14.
3. Emperor Alexander, 8, 12, 16.
3. Hawthornden, 3, 8, 12.
3. Irish Peach, 1, 2, 3.
3. Rymer, 2, 5 (k), 6.
3. Warner's King, 3, 5 (k), 10.
2. Braddick's Nonpareil, 9, 11.
2. Cockle Pippin, 6, 11.
2. Devonshire Quarrenden, 9, 13.
2. Early Julien, 2, 5 (k).
2. Frogmore Prolific, 4, 11.
2. Jefferson's, 4, 11.
2. Keswick Codlin, 10, 12.
2. Mère de Ménage, 12, 14.
2. Northern Greening, 10, 14.
2. Waltham Abbey Seedling, 2, 4.
2. Winter Hawthornden, 10, 14.
2. Winter Quoining, 4, 12.
1. Ashmead's Kernel, 6.
1. Baldwin, 8.
1. Boston Russet, 7.
1. Brabant Bellefleur, 13.
1. Cellini, 16.
1. Cockpit, 13.
1. Cornish Aromatic, 10.
1. Cornish Gilliflower, 1.
1. Downton Nonpareil, 7.
1. Dredge's Fame, 6.
1. Duke of Devonshire, 5.
1. Dutch Mignonne, 3.
1. Early Harvest, 15.
1. Eve, 1.
1. Fearn's Pippin, 11.
1. French Crab (Winter Greening), 9.
1. Golden Noble, 7.
1. Golden Pippin, 16.
1. Golden Reinette, 16.
1. Golden Winter Pearmain, 16.

1. Gooseberry, 6.
1. Gooseberry Pippin, 8.
1. Ingestrie Pippin, 13.
1. Joanneting, 12.
1. Lodgemore Nonpareil, 5.
1. Lord Burghley, 15.
1. Nelson's Glory, 9.
1. Nonesuch, 6.
1. Northern Spy, 1.
1. Peach, 15.
1. Pennington's Seedling, 9.
1. Rosemary Russet, 11.
1. Sykehouse Russet, 15.
1. White Calville, 15.
1. White Nonpareil, 5.
1. Winter Codlin, 12.
1. Wyken Pippin, 10.

BEST 12 PEARS.

14. Marie Louise, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 13, 14, 15, 16.
13. Glou Morceau, 1, 2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 16.
13. Louise Bonne of Jersey, 1, 2, 3, 5, 7, 9, 10, 11, 12, 13, 14, 15, 16.
12. Winter Nelis, 1, 2, 3, 4, 5, 6, 7, 9, 13, 14, 15, 16.
10. Williams' Bon Chrétien, 1, 2, 3, 7, 9, 10, 11, 14, 15, 16.
8. Doyenné du Comice, 2, 3, 4, 6, 10, 14, 15, 16.
8. Jargonelle, 1, 3, 5, 9, 11, 14, 15, 16.
7. Beurré d'Amanlis, 3, 4, 5, 6, 12, 15, 16.
6. Beurré Superfin, 4, 6, 7, 9, 10, 16.
6. Easter Beurré, 3, 7, 9, 11, 12, 14.
6. Ne Plus Meuris, 2, 5, 6, 7, 10, 12.
5. Bergamotte d'Esperen, 5, 8, 12, 15, 16.
5. Beurré de Rance, 1, 6, 7, 8, 14.
5. Beurré Diel, 3, 7, 12, 13, 14.
5. Joséphine de Malines, 2, 3, 4, 10, 16.
5. Knight's Monarch, 4, 5, 9, 14, 16.
5. Thompson's, 3, 5, 8, 9, 12.
5. Van Mons Léon le Clerc, 5, 11, 12, 13, 16.
4. Beurré Bosc, 1, 2, 11, 13.
4. Jersey Gratioli, 4, 10, 11, 15.
3. Fondante d'Automne, 8, 11, 15.
3. Passe Colmar, 7, 8, 11.
2. Beurré Clairgeau, 11, 13.
2. Beurré d'Aremberg, 13, 14.
2. Beurré Giffard, 4, 5.
2. British Queen, 8, 11.
2. Catillac, 1, 8.
2. Chaumontel, 6, 9.
2. Citron des Carmes, 1, 15.
2. Conseiller à la Cour, 2, 10.
2. Doyenné d'Eté, 2, 6.
2. Forelle, 10, 12.
2. Seckle, 1, 8.
1. Alexandre Lambré, 10.
1. Aston Town, 13.
1. Baronne de Mello, 4.
1. Beurré de l'Assomption, 2.
1. Beurré Hardy, 8.
1. Beurré Sterckmans, 6.
1. Bezi Mai, 3.

1. Comte de Lamy, 8.
1. Duchesse d'Angoulême, 13.
1. Dunmore, 13.
1. Gansel's Bergamot, 9.
1. Hacon's Incomparable, 14.
1. Morel, 12.
1. Suffolk Thorn, 6.
1. Swan's Egg, 12.
1. Urbaniste, 4.
1. Uvedale's St. Germain, 1.
1. Vicar of Winckfield, 7.

* * No. 15 only voted for eleven. No. 16 voted for thirteen.

BEST 12 GOOSEBERRIES.

12. Red Warrington, 1, 2, 3, 4, 6, 7, 8, 9, 12, 14, 15, 16.
9. Red Champagne, 1, 2, 3, 4, 7, 12, 14, 15, 16.
9. Whitesmith, 1, 2, 3, 4, 8, 9, 11, 15 (for size and flavour), 16.
6. Crown Bob, 1, 2, 3, 4, 8, 15 (for size and flavour).
6. Greengage, 3, 7, 8, 11, 12, 16.
6. Ironmonger, 1, 3, 7, 8, 9, 11.
5. Yellow Champagne, 1, 4, 7, 14, 15.
4. Keens' Seedling, 1, 4, 7, 11.
4. Roaring Lion, 8, 9, 11, 15 (for size and flavour).
4. Rough Red, 3, 7, 8, 15.
3. London, 1, 6, 9.
3. Pitmaston Greengage, 2, 4, 15.
3. Sulphur, 9, 11, 16.
3. White Champagne, 4, 7, 12.
2. Early Green Hairy, 2, 7.
2. Early Sulphur, 15, 16.
2. Glory of Ratcliff, 4, 9.
2. Langley Park Green, 2, 16.
2. Overall, 2, 16.
2. Queen Victoria, 3, 6.
2. Railway, 6, 9.
2. Rifleman, 8, 11.
2. Roseberry, 2, 16.
1. Angler, 12.
1. Antagonist, 6.
1. Aston Hepburn Yellow, 2.
1. Black Damson, 15.
1. Candidate, 6.
1. Catherina, 1.
1. Cheshire Lass, 11.
1. Companion, 3.
1. Criterion, 3.
1. Crystal, 17.
1. Dan's Mistake, 11.
1. Dreadnought, 16.
1. Duck's Wing, 8.
1. Eagle, 6.
1. Early Red, 15.
1. Fillbasket, 9.
1. Freedom, 1.
1. General, 6.
1. Golden Drop, 7.
1. Green Champagne, 7.
1. Green Corduroy, 16.
1. Green Gascoigne, 4.

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| 1. Green Laurel, 11.
1. Green Prolific, 3.
1. Green Walnut, 2.
1. Hairy Red, 1.
1. Hedgehog, 9.
1. Hepburn Prolific, 4.
1. Hero of the Nile, 6.
1. Huntsman, 9.
1. King of Trumps, 6.
1. Lancashire Lad, 9.
1. Leader, 11.
1. Legerdemain, 2.
1. London City, 8.
1. Nonpareil, 12.
1. Princess Royal, 4.
1. Rambullion, 15.
1. Raspberry, 6.
1. Royal White, 16.
1. Stockwell, 6.
1. Thrasher, 8.
1. Thumper, 1.
1. White Eagle, 8.
1. Yellow Ball, 3.
1. Yellow Boy, 12.
* * Nos. 5, 10, and 13 did not vote. Nos.
11, 12, and 14 only voted for eleven, seven,
and three sorts respectively.
BEST 6 STRAWBERRIES.
12. Keens' Seedling, 1, 2, 5, 6, 7, 8, 9, 10, 12,
13, 14, 16. | 12. Dr. Hogg, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 16.
11. British Queen, 4, 5, 6, 7, 8, 11, 12, 13, 14,
15, 16.
7. President, 3, 4, 9, 12, 13, 14, 16.
7. Sir Joseph Paxton, 3, 4, 5, 10, 11, 12, 13.
6. Sir Charles Napier, 1, 2, 3, 7, 8, 15.
5. Black Prince, 1, 7, 12, 15 (for preserving),
16.
5. Elton, 2, 7, 12, 13, 15.
5. Vicomtesse Héricart de Thury, 2, 4, 11, 15,
16.
4. Frogmore Late Pine, 8, 9, 10, 11.
3. Premier, 3, 6, 9.
2. Admiral Dundas, 6, 14.
2. John Powell, 5, 11.
2. Oscar, 1, 14.
2. Mr. Radclyffe, 5, 11.
2. Sir Harry, 7, 14.
2. The Amateur, 2, 6.
1. Black Bess, 8.
1. Carolina Superba, 1.
1. Eclipse, 9.
1. Eleanor, 13.
1. Filbert Pine, 10.
1. La Constante, 6.
1. Ne Plus Ultra, 3.
1. President Lucas, 15.
1. Rivers' Eliza, 10.
1. Trollope's Victoria, 4.
* * Nos. 6, 7, and 12 voted for seven, each. |
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SUMMER TREATMENT OF CARNATIONS AND PICOTEES.

THIS is the most interesting month of the year to those who are growers of these beautiful plants. Among Carnations very few new varieties have been distributed of late ; but the improvement in the Picotee seems to be making rapid strides, and no doubt during the present month many new varieties will present themselves. To insure a good bloom, these now demand particular care and attention. Disbudding, if not already done, should be at once effected, leaving on two, three, or four buds, as may be required. If they are grown for exhibition purposes, two blooms will be sufficient, but if not, a larger number may be left.

Green or aphid-fly is sometimes at this season very troublesome. They should either be brushed off with a soft brush, or the affected parts should be dusted over with Pooley's Tobacco-powder, which should be used early in the morning while the dew is on the grass. If the insects are very numerous and means are available for fumigating the plants, let this be done, as it is the most effectual remedy. During the time the buds are swelling, a little weak manure-water may be given them about twice a week. As soon as the buds become sufficiently full, they will require tying. The plants should be looked over every day, and those buds that are quite full should have a narrow strip of bass tied tightly round the middle of each pod, at the same time opening each division of the calyx ; this latter is a very great assistance to them, and will often save a pod

from splitting, even if it is not tied at all. By thus keeping the pods from splitting, the blooms keep much more compact and circular in form.

As soon as any of the blooms begin to open, they should be protected from the rain. This may be accomplished by setting them in a greenhouse, provided plenty of air can be given—which is very essential. Constant attention to watering is also absolutely necessary during the time they are in bloom, so as not to allow them to get too dry. The plants should be shaded from the sun, but should have as much light and air as possible at all times. Should the weather be very hot and dry, the foliage of the plants should be sprinkled once or twice a day, avoiding to wet the blooms. This will be a great assistance to, and will thus help to prolong, the bloom, besides which it will be beneficial to the “grass.”

When the plants have done flowering they should be returned to the open air, so as to get the shoots in good condition for layering, which operation should be performed early in August. The process, which is a very simple one, is this:—Prepare some light rich sandy soil; stir the soil out of the pots to a depth of about two inches, and fill up with the prepared soil; the layers should then have the leaves cut off to within the third or fourth joint from the top; then take the layer in the left hand, and with a very sharp knife make an incision in the under side, beginning about half an inch below the third joint, and extending it upwards through the centre of the stem, about half an inch past the third joint, cutting off the lower end or heel of this “tongue” just below the joint. The layer will then require to be pegged down. A most suitable peg for this purpose can be made from the common brake fern used in a green state. Take care not to press the layer more than half an inch deep in the soil, as they root much better when shallow, and keep them as upright as possible. In dry weather the layers should be frequently sprinkled with a fine rose water-pot, so as to keep the soil in a moist state. In about a month or six weeks they will be sufficiently rooted to be taken off and potted into small pots.—JOHN BALL, *Slough*.

THE RHODODENDRON AS A HARDY EVERGREEN.

THOUGH the *Rhododendron* is rightly considered as a hardy evergreen shrub, there can be no question that increased hardiness or robustness of constitution is a point which, even now, the raisers of new varieties would do well to be constantly aiming to secure. Many of the varieties now cultivated owe their parentage more or less directly to the *Rhododendron ponticum* of Asia Minor, or the *R. arboreum* of India; and experience has shown that whilst varieties in which the blood of *R. ponticum* is freely mingled, suffer in extreme winters from the destruction or deterioration of their dormant blossom-buds, though the plants themselves may be hardy enough, as far as their vegetative organs are concerned, the high-coloured sorts in which the blood of *R. arboreum* is present, even though filtered down by subsequent crosses with hardier kinds, manifest a degree of tenderness both in leaf and flower which gives but little hope of a fine display of blossoms in spring.

The importance of selecting for breeding purposes a hardier race than either of the foregoing species will yield, being thus apparent, it is a fortunate circum-



RHODODENDRON ROSEUM ELEGANS (from a photograph taken at Knap Hill: head 24 ft. in circumference).

stance that we possess such a race in the varieties of the North American *R. catawbiense*. These suffer scarcely at all in their flower-buds, even from severe winter frosts, and, moreover, have the immense superiority of carrying bold per-

sistent foliage, such as not only in the blooming season sets off the flowers to better advantage, but during the greater portion of the year, when the plants are not in bloom, marks them out as evergreen shrubs of the first order. The advantages to be derived from the infusion of this hardy constitution becomes at once evident when circumstances prove adverse. At Knap Hill, one of the chief homes of the *Rhododendron* in this country, we have seen these varieties of *R. catawbiense* with the buds fresh and full of life, at the same time—the winter of 1870-71, for example—that those of varieties bred from *R. ponticum*, when cut across, showed many of the embryo flowers blackened and lifeless, and that those with the blood of *R. arboreum* appreciable in their aspect were hopelessly destroyed. Such destructive winter frosts as that just noted are, fortunately, rare. They are not, however, the only risks to which the *Rhododendron*-blossoms are exposed. Late spring frosts, such as that of last Whitsuntide, come swooping down upon the plants like an eagle on its prey, and few of them could be expected under such circumstances to escape serious injury to their buds. But we have recently noticed at Knap Hill, where the breeding of these fine-leaved *R. catawbiense* varieties has, for many years, been most successfully carried on, that there are some sorts which bear up even against this crucial test of hardiness. This is the case with the variety called *R. roseum elegans*, represented in the annexed figure from Mr. Anthony Waterer's Catalogue, one of the early removes from the typical *R. catawbiense*, and unquestionably the best of all *Rhododendrons* for growing on into the tree form, since, under proper treatment, it always maintains a densely leafy head; this variety was untouched, the immense standard specimens being smothered with perfectly-developed trusses of delicately tinted rosy blossoms, while many others growing round about it of the ordinary rank and file were more or less crippled. The following sorts, too, which rank amongst modern varieties of the highest excellence both as to leaf and flower, were unaffected by the weather, namely, *Edward S. Rand*, *James Bateman*, *Mrs. Milner*, and *H. W. Sargent*, all fine bold varieties, of various shades of colour between crimson and rose; *Caractacus*, a rich purplish crimson; and *Old Port*, a fine and very distinct plum-coloured sort. These were everywhere conspicuous by their grand trusses of untarnished flowers.

None of our hardy flowering shrubs at all compare for beauty with the *Rhododendrons*; and in a favourable season—which this is not—a day amongst these plants is truly a red-letter day.—T. M.

FLOWER-GARDEN MANAGEMENT.—JULY.

THE heavy rains of the past month came very opportunely for bedded-out plants, and saved a deal of labour in watering; we only want a little hot sunny weather now, to make our gardens gay and beautiful. Any blanks that may occur in the beds or borders should be at once filled up. Constant, unceasing attention is now necessary to keep everything neat and in proper order; pick off dead leaves and flowers, and allow no straggling growths

or anything tending to give an untidy appearance. Keep *Verbenas*, *Petunias*, &c., nicely pegged down as they advance in growth, and attend regularly to the staking and tying-up of all tall-growing plants as they require it. *Roses* should now have some attention paid them; keep all faded flowers picked off daily, and give the plants liberal doses of liquid manure; budding should now be done when the stocks are in a fit state. Layer *Carnations* and *Picotees*, and put in pipings of *Pinks*. Put in cuttings of *Antirrhinums*, *Pentstemons*, *Phloxes*, &c.; they will strike freely at this season, if put into any light sandy soil under hand-glasses at the north side of a wall. Continue regularly to sweep and roll walks and to sweep and mow lawns.

IN-DOORS.—*Hard-wooded plants* set out-of-doors should have the same attention as though they were in the house, with regard to stopping, tying, potting, watering, &c. Shift at once any plants that require it, taking care that the old ball is moist at the time of potting. See that no plant suffers for want of water. An occasional syringing on fine evenings will be beneficial. *Pimeleas*, *Polygalas*, and other plants past flowering, should be pruned back, and placed in a favourable situation to start afresh. The young stock in pits and frames will now require a good deal of attention. Shift all plants that require it, and attend regularly to the stopping and training of the shoots; give abundance of air both day and night, and shade for a few hours in bright sunshine; attend well to the watering. Show and fancy *Pelargoniums*, which have done blooming, should be set in exposed situations out-of-doors to ripen the wood; they should afterwards be headed back, and the cuttings put in to strike. Attend well to the watering of *Zonal Pelargoniums*, *Fuchsias*, *Salvias*, and other *Soft-wooded plants* intended for autumn flowering. Shift seedling *Cinerarias*, *Primulas*, as they require it; these do best in a cold frame at this season, with plenty of air and water. Spare no pains to keep everything free of insects, and in a healthy, thriving state.—M. SAUL, *Stourton*.

FORCING LILY OF THE VALLEY IN AMERICA.

UP to the present time there has never been a sufficient supply of this flower to meet the demands of the florists in New York, and one of the principal Broadway Florists informed me it was unusually scarce last winter. I saw in one florist's house the remains of plants which had flowered but little, and was informed that it required too much heat, and did not pay for coals. These roots were round the outside edge of a bed of *Tuberose*s which had evidently flowered well for the New Year; the bottom-heat of this bed was perhaps 80° in the middle, but at the outside was perhaps not 60°. The Lily roots were imported from Germany. I may note that I saw several other things grown exceedingly well at this place: for example, one house of red and another of white *Perpetual Carnations*, each house 100 ft. long and 20 ft. wide; these surpassed anything I ever saw; flowers could be cut by the bushel, and every plant was perfect. The plants, of course, were but one year old,

which would have astonished a correspondent in a contemporary, who recently seriously recommended growing these plants on for several years until they were five feet high, with the splendid results of a dozen flowers at long intervals.

In another garden, managed by a very intelligent German, I saw on one side of the Orchid house a bed with hot-water pipes beneath, which gave a bottom-heat of 90° ; the top-heat was from 65° to 70° . In this bed imported German roots of Lily of the Valley were planted as thickly as the roots could be placed, in light soil, like asparagus-roots for forcing. A loose light soil was laid over to draw them up, and every root had a strong flower-stem. Patches were put in at intervals for succession, and when cut they were rooted out, and replaced by others. This was, of course, for cutting; but I have seen splendid pots grown at the same place, by filling the pots with roots and plunging them. Of course they were hardened off before being placed in the greenhouse or rooms. I was informed that 40,000 roots yielded a profit of 200 dollars, or say roughly, £1 per thousand—not a bad result, considering the small outlay, little trouble, and small space occupied, and that the flowers were all sold wholesale to a dealer.—
JAMES TAPLIN, *South Amboy, New Jersey, U.S.*

ON CONIFERS AS ORNAMENTAL PLANTS.

CONIFERS never shine more conspicuously as ornamental plants, in the borders of mixed shrubberies, than during the month of May, when they are putting forth their young growth; and by their extensive use in such borders there are grand effects to be produced, such as cannot be attained by any combination of evergreen and deciduous shrubs without their valuable assistance. Take, for instance, the rounded form and brilliant golden tinge of the *Biota aurea*, planted at equally recurring distances along or near to the front of mixed borders, which follow the serpentine windings of pleasure-ground walks; how beautiful they are by their very contrast to the varied forms of the numerous varieties of shrubs, and how gloriously they light up the scene, especially when there is a brilliant sunlight! Then, again, by way of contrast in form, flank them at equal distances with the lovely *Biota orientalis elegantissima*, with its upright habit of growth and most brilliant tints of colour; and that again by the darker foliage and more robust growth of *Biota orientalis* itself, the whole being backed up in wide borders with *Thuja Lobbii*, with a due admixture throughout of evergreen and deciduous shrubs. Amongst the latter the various forms of *Aucuba japonica* ought to figure largely; it is a plant which lights up shrubberies in a wonderful manner when allowed to grow into specimens; and now that there is a fair prospect of our having it clothed with beautiful berries, by merely planting male plants among the rest, it is to be hoped that they will lose their character of being cockneyfied because they happen to accommodate themselves to London smoke. In this way may be obtained splendid effects as regards contrast of foliage, similar in its way to the varied contrasts to be found in a house devoted to fine-foliage plants, only on a much larger scale.

The effects of these are greatly enhanced by repetition of certain striking forms in Conifers, for although repetition in many cases is apt to degenerate into monotony, yet in this case admixture with the differing forms of other shrubs entirely relieves it from the charge, and indeed contributes the principal features which enhance the pleasing effects of the whole in combination.

In borders of great length it is very easy to vary these attractions by the use of Conifers of different forms and habits of growth to the preceding, such as *Thuja Warreana*, *Libocedrus decurrens*, or *Thuja gigantea*, and *Cupressus Lawsoniana*, with its beautiful varieties, *aurea* and *argentea*; together with a newer and still more charming variety, called *Cupressus Lawsoniana erecta viridis*, which seems likely to grow into one of the most beautiful of the Cypress tribe. These may be backed up by that most rapid of rapid growers, the *Cupressus macrocarpa*, which on account of its celerity of growth should always be placed in the back row; indeed, I know of no subject more desirable than it to plant for the purpose of forming screens to hide out any unsightly buildings or other objectionable places. Care must, however, be taken to obtain the true variety, as many are apt to confound it with *Cupressus Goveniana* or *californica*, to which in a young state it is often very similar in appearance, and coming from the same regions, it might be supposed they were equally hardy; the reverse, however, is the case, as in the severe winter we had a few years back, every plant of *C. Goveniana* was killed, where *C. macrocarpa* stood unharmed. *Juniperus virginiana*, and that most lovely of Junipers when in bloom, *Juniperus sinensis*, may enter into this combination; and with their aid we have the means of producing very varied and charming effects indeed, always supposing them to be mixed up with evergreen, deciduous, and flowering shrubs, not too much crowded, and the same form in Conifers recurring at nearly equal distances throughout the serpentine lines or undulating forms of the borders.

It is not to be denied that most of the above, and indeed many more, are very beautiful and attractive as single specimens or in groups of two or three upon grass, where they can have plenty of good soil and ample room for development. So treated, they afford the means of producing very grand effects in scenic embellishment, depending, however, more on their intrinsic merit as perfectly-grown specimens than on their beauty in combination. I do not, therefore, agree with many who say that it is the only proper way to grow the more ornamental Conifers; I can see a vast amount of beauty in them when mixed with a variety of foliage; and in this case inferior specimens may be used, because when seen from a distance where, as the poet sings,

“Distance lends enchantment to the view,”

it is only the tops of the trees and shrubs which attract attention, and if the plants in the front are tolerably well furnished, we can afford to dispense with perfect specimens in the background. Besides, most evergreen and many deciduous shrubs bear cutting back well, so that by their aid the borders may always have a furnished appearance maintained, and the Conifers thrusting

themselves, as it were, through the leafy carpet, are seen to very great advantage.
—JOHN COX, *Redleaf*.



MONTAGNÆA BIPINNATIFIDA.

OF the many choice plants used for what is called Subtropical Gardening, that of which (thanks to the publisher of M. Alphand's *Les Promenades de Paris*) we now introduce a woodcut, is second to none. Indeed, we think it shares, with the noble Wigandia, the first place amongst them all. It is majestic and dignified in habit, its stout erect stems being handsomely

fluted, and furnished with noble leaves set on in opposite pairs, large, so as to give grandeur and amplitude to the plant, but entirely removed from any appearance of coarseness. These leaves, which are conspicuously stalked, are ovate in outline, and divided in a bipinnatifid manner. They are often nearly three feet long, and when well grown form a truly grand and luxurious leafy mass.

The plant is better known in English gardens under its synonym of *Polymnia grandis*, and it is also called *Montagnea heracleifolia*. For the summer garden it is best to employ young spring-struck plants, planting them out in June, when all danger of ungenial weather is past. If then put into good soil, and properly cared for, they grow away rapidly, and form magnificent plants long before the end of the season. Such young plants, both of this and the *Wigandia*, make much handsomer specimens than larger and older ones, which necessarily are more or less stunted before they make a start into their summer growth.

ON CURING AND STORING POT-HERBS.

THE Chinese, who are said to be surprised at our sending to China for Tea, when we have got Sage at home, would never think of using a decoction of herbs dried and preserved after such a fashion as our little besoms of Sage-stalks, hanging from a rusty nail in a dusty shed. I paid 1s. 6d. not very long ago for a few stalks of dried Basil of about three ounces' weight, and I had to look closely to the habit of the plant to make sure of its identity, so much of the fragrant character being gone. Now whilst good Tea is to be had at 4s. per pound, and the market price of dried Basil is 8s. per pound, that is, twice the price of Tea, there is good reason for the customer to complain that he does not get Basil dried and kept in canisters or lead-lined boxes like Tea. But this is not all, for when you buy your Chinese Tea you get the leaves, and not the stalks along with them; but when you get home-grown Basil, you get root and branch, for it is sold as plucked up by the root, and consequently its weight and bulk are increased by what is of no value to the consumer.

Take, for another example, the Chamomile-flowers as you see them in a chemist's window; they are beautifully white and fragrant, no stalks, no dust, no waste; you get the dried flowers in perfection; they are weighed before your eyes, and the price is as low as the vendor can afford to sell them at. They, too, are of home growth, but they had to be got into marketable condition before the chemist would buy them from the grower.

Some 40 years ago, the gardener at Chiswick House—I think it was Mr. Lindsay—respected herbs: he collected the leaves, and pressed them in a flaccid state in a mould till they took the form of a flat flue-tile, when they were stove-dried or kiln-dried, and kept wrapped up in paper, neatly labelled. Mr. Lindsay used vapour baths, and herbs were largely employed in that way medicinally. I, for one, feel much obliged to him for putting me in the way to preserve herbs, for his system of pressing them into blocks preserved the flavour of the leaf, by having the smallest amount of outside exposed to the air.

This system, however, did not quite answer my purpose, and I simply picked the leaves and tops, and when they had been highly dried, I preserved them in tin canisters, just as the tea-dealer preserves his Tea. Now if anyone will examine the leaves of the Tea plant, in a teapot, he will see of what simple materials the finely curled crisp Tea of the Chinese is made up, and will soon feel convinced that the Celestials are far ahead of us in the way of drying their tea-leaves. Many of our own herbs of the class of native bitters, such as Chamomile, Wormwood, Horehound, Water Trefoil, and the like, are worthy of a better fate than to be hung in wisps in some outhouse till they are wanted.

Stretford, a township just outside the parish of Manchester, is famed for its Black puddings, and the chief merit of the different "makes" consists in the herbs used to flavour them; and as herbs used as Tea, such as Ground Ivy, should certainly be kept clean and free from dust, so the Pennyroyal used for Stretford black puddings should unquestionably be taken some care of. The housewife dries her Lavender-spikes with due care and cleanliness, and well she may, for they are to scent the clothes-drawer. The picking, drying, and packing of Hops leave nothing to be desired; they are therefore a pattern to all persons having to cure or preserve herbs. There is no bunching of useless stalks in hop-drying, for the "bine" is burnt in the field, whilst the marketable Hops are gathered into barns, kiln-dried over clear fires, or dried by radiant heat from open fires, and then, lest their virtues should be lost by exposure to air, they are tightly packed into a particular kind of canvas bag, so tight indeed that we wonder how such materials could ever be crammed into so small a compass. It was no doubt from the practice of Hop-pressing that Mr. Lindsay took his idea of pressing herb-leaves. If I can only succeed, by referring to the above practical examples, in inducing people to pick the leaves and tops of Pot-herbs, and fling away the stalks, then either to dry the leaves in a cool oven or in a "hastener" before the fire, and when dry to treat them to a canister like Tea, marking the name of the herb and the month and year it was preserved, they may be surprised to find that many herbs will thus keep good and fragrant for several years. We generally see in the grocers' window the announcement, "New Season's Tea," and we read in the newspapers of ships racing homeward-bound with the first arrivals of the new season's tea; but beyond this, there is no notice taken of the age of the tea that our evening meal is made from; and that which my tea-caddie holds now, and of which a decoction was duly served up to all hands only an hour ago, may, for aught we know, be in its seventh season. Confined in lead, as it always is, there seems little change in this highly dried herb for years.

If the canistering system were once adopted, the cook could be supplied with a canister of preserved pot-herbs from the garden as required, and he could then help himself *ad lib.*, without troubling the gardener for driblets. The price of the Basil above mentioned was exorbitant, and the preservation was abominable. It is, therefore, high time to call attention to this subject, by no means an

unimportant one. Black-puddings may be reckoned as the lowest form of human "vittle," quite at the bottom of the ladder of cookery, yet this article is supplied to the "million" by tons weekly in Manchester, at the low figure of 3d. or 4d. per pound. To do justice to this branch of business, no small amount of herbs would be required: a large portion indeed contain no herbs, and very little seasoning of any kind, having been "made to sell." The market inspector could hardly say what lard, what groats, what seasoning, pigs' puddings should contain; and when the pigs' blood is not "shed," but carefully "saved," who could come red-handed, and weigh or measure the chief ingredient of black puddings? One thing is certain, namely, that for want of finely-preserved herbs, these and many other articles of food and medicine are cheated out of their seasoning.—ALEX. FORSYTH, *Salford*.

NEW BEDDING PANSIES.

HAVING had a few new varieties sent us last season said to be good for spring bedding, I may note that the following have this season been found to be very fine:—*Cloth of Gold*, rich golden yellow, with dark centre; flowers large, very fragrant; blooms abundantly from March to October. *Aurora*, golden yellow, centre and margin of lower petals bronzy crimson; upper petals rich velvety puce; profuse bloomer. *Black Prince*, dark velvety purple, with yellow eye, a large and very fine flower; vigorous grower, and abundant bloomer. *Great Eastern*, white centre, and broad margin of rich violet-purple; large flowers borne in great profusion. *Queen of Scots*, purplish blue, with orange-coloured eye; large flowers, and very free bloomer. *Sunshine*, rich golden yellow, margined with orange-red, and prominent dark eye; a beautiful variety. *White Swan*, creamy white, margined with rosy pink, the centre light purple, with yellow eye; good bloomer. *Hector*, velvety maroon, with purple centre and yellow eye; a strong grower, and very free bloomer.

All the above, if prepared like other bedding plants, will, besides flowering early in spring, do so all the summer. Seedlings sown about May, with liberal treatment through the summer, make a fine display the following spring. All Pansies, however, for continuous blooming require high feeding.—A. H., T.

CROTON JOHANNIS.

FIGURES of several of the new Crotons have from time to time appeared in our pages. They are all exceedingly ornamental plants, but that of which we now introduce an illustration is one of the most elegant and distinct. It belongs to the group represented by the old *Croton lineare*, but is a much finer plant. The leaves, which are narrow, linear, and drooping, attain as much as two feet in length, and are of a glossy green, the centre and margin being of a bright yellow. It has been sometimes called *C. angustissimum*, and, like its allies, belongs to the *Codiaeum variegatum*, though better known in gardens under the older name of *Croton*. It will be seen from the graceful habit

of the plant that specimens of suitable size will be exceedingly ornamental, either for dinner-table decoration, or for exhibition purposes.—T. M.



CROTON JOHANNIS.

GRAPES AND SUNBEAMS.

HAVE grown the *Gros Guillaume*, or, as it is commonly but erroneously called, the *Black Barbarossa* grape, for several years, with other kinds, and always found the fruit to keep better than that of the others. The clusters are very large; they seldom “shank,” and they appear fresh in

winter and spring. The complaint of this grape being inferior, seems to arise from bad treatment. Like the St. Peter's, or the section to which it belongs, it is of rank growth, and the leaves after the fruit is ripe become highly tinted with purple. If, however, they acquire this tint before the fruit is ripe, the complaint may be well founded; for it is upon green and healthy leaves only that the sun's rays can act properly, so as to nourish the fruit.* The leaves of white grapes generally become yellow in autumn, while those of black ones are, if tinted, purple, and perhaps none more deeply so than the *Gros Guillaume*. Such changes of colour in the leaves of plants in autumn are the effects of sun-light on their different elements; and though the process is mysterious, still the late discoveries of Mr. Hunt in reference to the properties of the "sunbeam" throw some light on the subject. A more recent writer observes that a sunbeam contains three prominent principles—*actinism*, *light*, and *heat*. The first is chemical, and is most powerful in spring, or "in the infancy of vegetable life." The second is luminous, and prevails "in the youth of a plant." The remainder or "heated rays are most predominant in autumn to ripen the fruit." But though those periods of the season are mentioned in particular, yet all the three forces are always more or less active, according to the state of the weather, in all the phenomena of the growth of a plant. Moreover, the *actinic* rays are as powerful in autumn as in spring; for they give to the foliage of trees their "autumn tints," to fruits their pellucid hues—this, too, in some instances, in a very remarkable manner, for the exact imprints of leaves may be seen on fruit which has been partly shaded by them: witness those on peaches.—J. WIGHTON, *Cossey Park*.

FRUIT CULTURE.—JULY.

THE fruit crops this year will, I fear, be below the averages, except *Strawberries*, which in most places promise to be abundant; and *Bush fruit*, which also is good in some localities. The frost on the mornings of the 19th and 20th of May made sad destruction of the *Apple* crop, which up to that time promised to be very abundant, as there was a splendid show of blossom, with every appearance of its setting, but the crop of fruit will be a very light one. Every attention should now be given to fruit trees to secure well-ripened wood for another year. The stopping, thinning, regulating, and the nailing or tying-in of the young wood, and the destruction of insects, are the chief matters now requiring attention. Frequent and heavy syringings with the garden engine will help to keep down insects. Plum trees have been badly infected with green-fly. Thin the young wood well on *Figs*, and allow it to grow from the wall. Go carefully over the fruit trees, and remove all superfluous shoots. Thin out *Raspberry*-canes, and keep the centre of *Gooseberry* and *Currant* trees open. Make new plantations of *Strawberries*.

* The point in Mr. Wighton's remarks, which should be specially noted, is, that the leaves of vines should be kept healthy until the fruit is well ripened. How to do this may depend on circumstances and seasons, but must go hand-in-hand with the avoiding a saturated atmosphere.—ED.

IN-DOORS.—The instructions given last month for *Pines* will serve for this; keep all the growing plants thin, that they may grow stiff and robust; shift any plants that may require it; give air freely, water liberally, and be careful the bottom-heat does not decline much below 85°. Attention should now be paid to the ripening of the wood in those *Vineries* where the fruit is cut; stop late growth; syringe the vines freely to keep the foliage clean and healthy, and give abundance of air at all times. In *Vineries* where the fruit is colouring admit air freely by day and leave some on at night also; maintain a moist growing atmosphere where the fruit is swelling; continue to stop the laterals in late *vineries*, and if not sufficiently thinned, remove a few more berries. Attention should also be paid to the ripening of the wood of *Peaches* in the early houses as soon as the fruit is all gathered; keep inside borders well watered in houses when the fruit is swelling, and give abundance of air. Attend well to the watering of *Figs* that are swelling-off their second crop; syringe the foliage to keep down red-spider, and maintain a moist atmosphere by wetting the borders, floors, &c. See that *Cucumbers* and *Melons* have a nice steady bottom-heat; keep the shoots well thinned, as nothing is worse than allowing them to grow crowded. Water well when they require it, and give air freely at every favourable opportunity.—M. SAUL, *Stourton*.

GARDEN LITERATURE.

IN BOTANY FOR BEGINNERS* we have a most successful attempt to infuse a little freshness into a treatise on elementary structural Botany. By means of a new series of objects, and a new set of illustrative figures, the subject is presented in a new form, and with attractions of its own. The plan of the author is to commence with the simplest forms of flowers, and pass on to the more elaborate—a plan which has this advantage, that it can be made progressive with the season. Hence the book will exactly fit the requirements of home study as well as meet the purposes of self-instruction, since the language is precise and definite. The illustrations are 78 in number.

The Rev. W. Lea, in a small duodecimo entitled *SMALL FARMS*†, endeavours to show how such a farm can be made to afford a very good living to its occupier. His hobby is fruit-growing, and a few years since he set about riding it, with a view to see whether or no such farms might be made to pay if planted with fruit. How far this was effected, and the means employed, form the subject of the few short chapters in which this sixpenny treatise is comprised.

More about Fruit-Trees may be learned from M. Du Breuil's book,‡ which is an excellent treatise on Grafting, Pruning, Training, Renovation, and Preservation in general, with special sections devoted to the Pear, Apple, Peach, Plum,

* *Botany for Beginners*: an Introduction to the Study of Plants. By Maxwell T. Masters, M.D., F.R.S. London: Bradbury, Evans, and Co.

† *Small Farms*: how they can be made to answer by means of fruit-growing. London: 171 Fleet Street.

‡ *The Scientific and Profitable Culture of Fruit-Trees*. From the French of M. Du Breuil, adapted for English cultivators by William Wardle. Second Edition, revised, by William Glenny. London: Lockwood and Co.

Cherry, and Apricot. The instructions are plain and practical, and the information sound and useful. Mr. Glenney has simply added a few laudatory phrases.

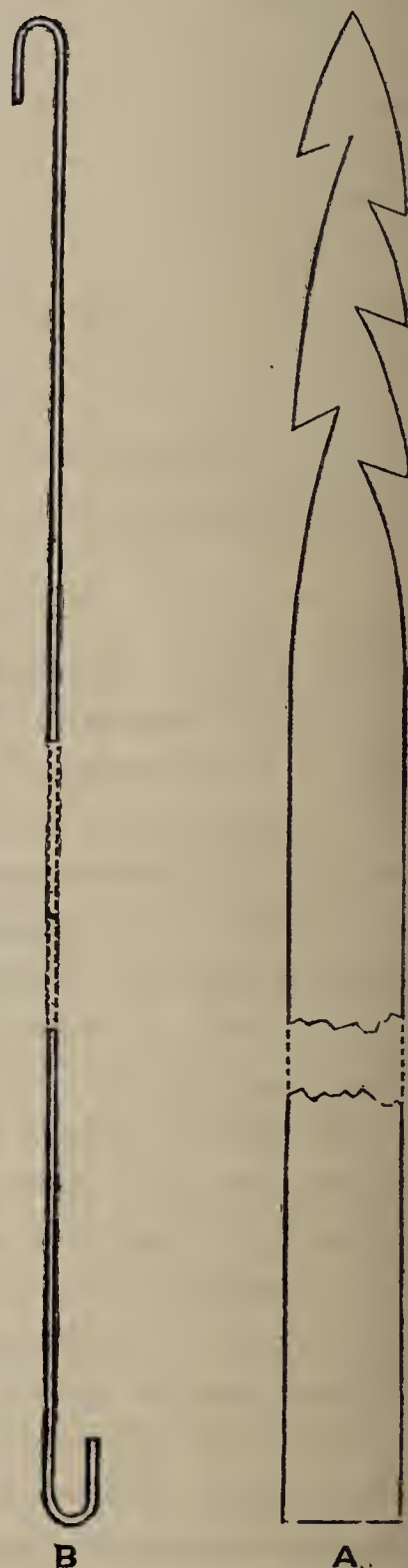
THINNING GRAPES.

IF there is one gardening operation more tedious and irksome than another to amateurs, it is that of Thinning Grapes; yet it is an operation that forbids neglect and brooks no delay, if even a fair crop of the luscious fruit is to be secured. Nature, ever bountiful, is so profuse in the matter of the setting of grapes, that when by high culture or careful attention we add to the natural size of the berries, it is imperative, if we would prevent them from spoiling each other, that we should give them extra space to swell in.

The experienced gardener, when he sets about thinning Grapes, takes his scissors, and aided by the thumb and finger of his left hand, he manipulates the clusters with more or less expertness. It is, however, impossible even for him to avoid rubbing and touching the remaining berries to some extent; a less expert manipulator would be likely to endanger the appearance of the berries, by disturbing their waxy coating of bloom.

An ingenious little implement, which does away with the necessity for handling Grapes whilst thinning them, has been devised, for his own convenience, by Mr. Chapman, of Nottingham. This contrivance, which is remarkably simple and perfect in its working, and which greatly facilitates the operation of Grape-thinning, is a "holdfast," made of a thin narrow strip of deal or other light wood, cut to a convenient length, one end being bluntly pointed, and indented with a few irregular, unequal notches, as shown at A in the woodcut, all the sharp edges being pared off. When in use, it is taken in the left hand, the point introduced amongst the ramifications of the cluster, which one by one are lifted out clear from the remainder, being caught by one or other of the notches, and that without touching a berry, or injuring the fruit in the slightest degree. While the shoulder or branch of the cluster is thus held lightly but securely, the supernumerary berries are cut away; the holdfast is then gently unhooked, and passed on to the stalk of another bunch. There is no fingering of the bunches or berries, and the operation of thinning can be carried on quite as rapidly and as easily as if the fingers alone were in requisition.

Mr. Chapman has another equally facile contrivance for supporting the shoul-



A, Holdfast for thinning Grapes.
B, Wire hook for suspending the shoulders of the bunches.

ders of the clusters, which are usually held apart during the swelling and ripening processes, either by inserting thin forked sticks across the bunches, or by tying up the shoulders by means of fine strands of bast matting. In either way the berries are very liable to be rubbed, and thus disfigured. To avoid this, Mr. Chapman takes some of the very fine wire used for wiring the corks of lemonade-bottles, &c., cuts it into convenient lengths, by means of a notch at the base of the blade of his Grape-scissors, turns a small hook at each end, as in fig B, and by this means momentarily, and without handling the bunch at all, hooks up the shoulders, and supports them in the required position by catching with the hook at the opposite end an adjacent branch or wire, whichever may be most conveniently placed. In this way the thing is done in less time than it takes to describe the operation.

These two simple contrivances, which greatly facilitate the thinning of Grapes and the opening up of the bunches during the swelling process, commend themselves to the notice of gardeners, both professional and amateur.—T. M.

KITCHEN GARDENING FOR JULY.

NOTWITHSTANDING the unfavourable condition of the soil at the time of getting in the seeds, and the dull, cold spring we have had, vegetables, though rather late, are, on the whole, very promising. The showery weather of the past month has been very favourable for transplanting operations; and where advantage has been taken of it in getting out *Broccoli*, *Winter Greens*, *Celery*, &c., the plants will now be in a satisfactory condition, and will not require much water except very extraordinarily hot weather sets in. If from any cause the main breadths of *Broccoli*, *Brussels Sprouts*, *Borecole*, *Savoys*, &c., were not planted last month, as recommended, there should now be no delay in getting them out. Plant out large breadths of *Walcheren Cauliflower*, three times during the month; those planted at the beginning of the month will furnish a supply for table in October and November, and those planted out towards the end of the month, if lifted and put into cold pits before they are injured by the frost in November, will furnish a supply of heads during December, January, and late into February, by which time *Backhouse's* and *Snow's Winter Broccolis* will be fit for use. Plant out a large breadth of *Celery*, and keep the plants watered until they are well established; earth up the early crop as it advances in growth. Plant out *Lettuces*, and sow some in drills to be thinned out to proper distances when the young plants are fit; this is a better plan at this season of the year, especially if the weather be hot and dry, than sowing in beds and afterwards transplanting. Plant out *Cabbages*, sown in May for autumn and early winter use, a foot apart. About the middle of the month I sow *Cabbages* for the next spring and summer crops; in cold late situations they should be sown a few days earlier, and in early places they may be sown a few days later. Sow a large breadth of *Turnips* at the beginning, and again towards the end of the month; also a large breadth of *Spinach* towards the end of the month. Sow

Kidney Beans for a late crop, also some *Endive* for winter use, and *Radishes* in cool situations. Earth up and stick *Peas* as they become fit. Keep the hoe constantly at work between all growing crops, also in all vacant places, to keep down weeds, which, owing to the heavy rains of the past month, have been troublesome. —M. SAUL, *Stourton*.

NOVELTIES, ETC., AT FLOWER SHOWS.

THERE were several good new and novel things staged at the Meeting of the Royal Horticultural Society on June 5th, but perhaps that which attracted most attention was a superbly flowered specimen of the rare *Utricularia montana*; it had the appearance of a densely-bloomed white-flowered Orchid, the blossoms being produced in gracefully pendent clusters, pure white, with yellow spots; this was shown by Mr. Denning, gardener to Lord Londesborough, Grimston Park, Tadcaster. A very fine batch of new large-flowered *Pelargoniums*, mainly seedlings of Mr. Forster's raising, was shown by Mr. C. Turner. First-class Certificates were awarded to the following:—*Prince of Wales*, *Highland Lassie*, *Duchess*, *Countess*, *Druid*, *Scottish Chieftain*, *Robin Hood*, *Ruth*, *Senator*, and *Syren*; of these I will furnish a more detailed account shortly; suffice it to say that the best part of these were flowers of superb quality, some having much novelty of colour. *Pelargonium Captain Raikes* (F.C.C.) had the appearance of belonging to the French spotted section; the flowers were semi-double, and of a blood-crimson hue, veined with maroon, but the smell from them was not desirable; it was very free of bloom, and was shown by Mr. Weatherill, of Finchley. *Pelargonium Richard Cœur de Leon* (F.C.C.) is one of Dr. Denny's seedling zonals, large in size, well formed, and of a rich orange-scarlet hue. One of the most interesting new things staged was a yellow-flowering species of *Aquilegia*, from the Rocky Mountains, shown under the name of *A. aurea* (F.C.C.), by Mr. T. S. Ware; this is a valuable addition to such fine species as *A. alpina*, *A. cœrulea*, and *A. glandulosa*; and not only so, it must prove eminently useful for cross-breeding purposes. The same award was made to Mr. Ware for a glossy black *Pansy* named *Pluto*, by no means first-rate as a show variety, and like all black *Pansies*, of but little value for bedding purposes. A much better thing was *Petunia King of Crimson* (F.C.C.), a double-flowered variety of a rich purple-crimson hue, and highly effective as a pot plant; this came from Messrs. S. Dixon and Co., Hackney. *Tree Carnation Model* (F.C.C.) had French-white flowers, somewhat small in size, but with finely formed petals; it came from Mr. W. Lee. A fine bold-leaved ornamental-foliaged plant, named *Botryodendron magnificum*, but probably *Meryta latifolia* (F.C.C.), with large bright-green glazed leaves, was shown by Messrs. Downie, Laird, and Laing, and much admired; it requires an intermediate house.

Groups of admiring sight-seers gathered round a stand of brilliant-hued Fancy *Pansies* from the same exhibitors, really splendid in size and colour; round some magnificent cut blooms of double *Pyrethrums*, of great size, and

bright colours, from Messrs. Kelway and Son, Langport; and still more numerous did they crowd about a large collection of brilliant-coloured spikes of *Ixias*, *Sparaxis*, *Babianas*, *Tritonias*, &c., from the bulb-grounds in the Channel Islands, and which were staged by Messrs. Hooper and Co., Covent Garden. If we could only grow these glorious plants in our gardens, under ordinary treatment, as they can be grown in Guernsey, what a revolution would be worked in our gardens!—R. D.

GARDEN GOSSIP.

IN reference to *the state of the Crops in North Nottinghamshire*, Mr. Tillery writes:—"Up to this date (June 12) vegetation is very backward, for dull, wet, and breezy weather has prevailed for the last two weeks.

The frosts on the 19th and 20th of May thinned the hardy fruit crops to a serious extent, and in low, exposed situations all tender vegetables above ground were cut down. The *Gooseberries*, *Currants*, and *Raspberries* showed their young fruit quite blackened on the tops of the bushes, and only half a crop escaped, where covered by the foliage. The *Apples* were in full flower at the time, and seldom have the trees being seen fuller of blossoms, but now it has mostly dropped off, and this invaluable fruit is again a failure. The *Plum* crop, both on walls and on standards in the open borders, is likewise a failure, and the trees are covered with legions of aphids and grubs, the dull, cold weather favouring these pests in their ravages. A fair sprinkling of *Pears*, both on bushes and pyramids, have been uninjured where protected by the foliage; and on the walls with a south aspect, where the trees flowered early, there are excellent crops of *Maria Louise*, *Louise Bonne*, *Glou Morceau*, *Winter Nelis*, and *Beurre Superfin*. *Apricots* are a very thin crop, even where protected with glass, but there was only a small show of weakly blossoms on the trees, which never promised to set well in the dull, cold weather in March and April; the trees bore a heavy crop last year, and the wet, cold summer never ripened the wood properly, so that their failure this year is easily accounted for. Having a long range of heated glass-covered wall here, I am independent of the weather in growing *Peaches*, *Nectarines*, *Cherries*, and *Plums* in it, both in the borders and pots, and this year I have better crops of these kind of fruits than usual. Of late years the prevalence of spring frosts has made out-door fruit-growing quite a lottery, for we can only depend upon one out of three years to be a good fruit one. In all large gardens, therefore, where a supply of dessert fruit is indispensable, a resort to glass-covered erections, whether heated or unheated, must be made in order to be safe in seasons like the present."

— THE Whitsun Exhibition of the *Manchester Botanical and Horticultural Society* has proved to be one of the most successful of the series now for several years held in the gardens at Old Trafford, between 50,000 and 60,000 persons having visited it during the week, and the receipts having reached to £2,000. The premier plant of the whole exhibition—for which Mr. Mendel offered a special prize—was adjudged to be the *Ixora Colei*, shown by Messrs. Cole and Sons, of Withington; as a valuable exhibition plant, this new variety goes on increasing in popular favour from year to year, and the very fine example staged on this occasion was too meritorious to be passed over. Mr. Baines' large variety of *Sarracenia flava* was voted the second place, and was a marvel of excellence.

— THE *Royal National Tulip Show* was held in the Botanical Gardens, Manchester, on May 25. Between 60 and 70 members entered, and the competition was very close for almost every prize. The season has been about the worst for the Tulip that any of the growers can recollect, and heavy losses from mildew have occurred throughout the country. Notwithstanding these drawbacks, the show was a surprise to everybody, some 2,500 blooms having been staged. Mr. D. Barber, who won the champion cup, had the advantage of a more genial climate, and consequently his flowers were more fully grown and better developed than those of Mr. Barlow, of Stakehill, who was awarded second honours, and whose flowers seemed to require another week's growth. At a meeting held at the Dog and Partridge Hotel, it was resolved that next year the exhibition be held at Birmingham. The following kinds were the best flowers shown in their respective classes:—*Bizarres*:

Ajax, Sir Joseph Paxton, Dr. Hardy, Orion, Lord Byron, Demosthenes, Royal Sovereign, Commander, Charles Brown, Lord Raglan, Curion, Masterpiece, and George Haward. *Byblæmens*: Talisman, Duchess of Sutherland, Adonis, Bacchus, Violet Amiable, Walker's Attraction, Martin's 101. *Roses*: Aglaia, Heroine, Rose Celestial, Triomphe, Royal, Industry, Mrs. Lea, Mrs. Barber, Madame St. Arnaud, and Sarah Headly.

— **MR. William Paul's Exhibition of Pot Roses**, held at the Crystal Palace during the last week in May, was an unqualified success. Over 3,000 Roses, varying in size, were intermixed with other subjects employed with excellent effect to relieve or tone down their rich glowing colours. The plants used for this purpose being pyramidal Ivies, Purple Beech, Golden and other variegated Oaks, and *Acer Negundo variegatum*. The "lion" amongst the Roses was the new Princess Beatrice, a flower that will take high rank amongst exhibition kinds, on account of its fine form and great substance.

Obituary.

— **G. W. HOYLE, Esq.**, of Reading, died at an advanced age, on May 26, from a stroke of paralysis. Mr. Hoyle was perhaps better known amongst florists as a breeder of show Pelargoniums; and to no one, perhaps, are we more deeply indebted than to him for the high state of perfection to which this flower has been brought. He was an occasional correspondent of the *FLORIST AND POMOLOGIST*.

— **MR. GEORGE YOUNG**, for many years gardener to W. H. Stone, Esq., M.P., Leigh Park, Havant, died on May 17, after a short illness, aged 56 years. Mr. Young was well known as a frequent and successful exhibitor at the metropolitan shows.

— **MR. GEORGE LIGHTBODY** died at Falkirk on June 9, after very severe and lengthened suffering, at the age of 77. Mr. Lightbody was well known as a veteran and enthusiastic florist, and obtained a well-deserved reputation as a raiser of the *Ranunculus* and the *Auricula*, with which last his name is especially connected.

— **MR. HECTOR ROSE**, Her Majesty's gardener at Frogmore, died on June 5, after an illness of 10 days, aged 46. He was a pupil of Mr. W. Thomson at Dalkeith, where he filled with distinction the responsible post of foreman; subsequently he was appointed gardener at Floors Castle, where he remained 11 years, quitting this situation in 1868, to enter upon the charge of the Royal Garden at Frogmore. He was a thorough practical gardener, and was highly esteemed by all who knew him.

— **MR. MARK JOHN MCKEN** died at Natal, on April 20, in his 49th year. He had been since 1860 curator of the Natal Botanic Gardens, in which position he did much to collect and distribute the new plants of that rising colony; but for the last year or two his health had been failing, and he now leaves a widow and six children unprovided for.

— **MR. EMANUEL SAGE**, of the Graperies, Atherstone, died on June 2, in his 46th year. He was for 15 years gardener to the late Earl Howe at Gopsall Hall, and was an excellent gardener, well skilled in fruit-culture. He leaves a widow and young family.

— **THE Rev. W. ELLIS**, of Rose Hill, Hoddesdon, died on June 9, at the ripe age of 77. Mr. Ellis in early life was connected with the London Missionary Society, and was employed in missionary work amongst the islands of the Southern Ocean, in which capacity he visited Madagascar, and was the means of introducing several valuable plants, among others *Ouvirandra fenestralis*, *Angræcum sesquipedale*, *Ellisii*, and *articulatum*, *Grammatophyllum Ellisii*, and *Adiantum asarifolium*.



John Standish Gladiolus.

GLADIOLUS JOHN STANDISH.

WITH AN ILLUSTRATION.

THIS very fine variety of Gladiolus was raised by Mr. Douglas, the talented gardener at Loxford Hall, Ilford, and was exhibited in September, 1870, when it gained a First-class Certificate. As shown, it was a flower of large size and fine form, and one of those in which the two opposite sepaline segments are uppermost, the two opposite petaline segments below; the flowers were also remarkably stout in substance. The colour was a pale flesh-like hue of remarkable delicacy, the lower segments being flaked with purple.—T. M.

RUST UPON GRAPES.

THIS is an occurrence which frequently perplexes and annoys the most pains-taking gardener, and one, also, which occasionally puzzles him, putting his wits to extremities in tracing and finding out the real cause. So little marks and injures the fruit in its earliest stages of formation, that rust will be produced by various and often unexpected agents. Black grapes are also more easily affected than white; and none are more liable to it than that good old sort, the *Black Hamburgh*. Sulphur applied to hot-water pipes for the purpose of destroying and keeping down insects, is a common and active agent in bringing on rust; so is the admission of air in cold draughts, such as are produced by the sudden opening of a door. Water heavily applied by a syringe, and the wafting or twisting of a leaf when air is admitted on a very windy day, are other means by which a disfiguration may be made on the surface of the berries.

There is, however, another powerful rust-producer, which I have no doubt is a far more active agent than most grape-cultivators are aware of, that is iron-rust formed on the piping, troughs, and cisterns of the heating apparatus. In our earliest vinery here, I was a good deal troubled with rust for about three years, and was very particular each year, and guarded against everything that I understood produced it; still it came, and attacked berries from bottom to top of the house. The heating apparatus had three 9-ft. lengths of trough-pipes distributed along the front; these were kept painted, inside the trough as well as outside, and, in the earliest stages of starting the vines into growth, were kept constantly filled with water to keep up a moist atmosphere, but were allowed to become dry as soon as any of the bunches reached the flowering stage, and were not again filled up through the season. The constant supply of water for a time had softened the paint, and a cake of rust which, when the water was dried up, showed itself in small patches, had formed beneath the surface. This allowed the oxide of iron to be carried over the house when the pipes were strongly heated. I had at first some doubts of this being the entire cause, as the bunches directly over these troughs were not more affected than others at the top of the house. In order to prove, however, whether or not this was the real

cause of annoyance, I had the pipes and troughs thoroughly cleansed, and three coats of paint put on all over every part, no water being allowed in the troughs afterwards in any stage of growth. The result is, that not a single berry is this season affected in any part of the house. I would therefore advise those who are troubled with similar annoyances, to thoroughly examine their heating apparatus. —J. WEBSTER, *Gordon Castle*.

ELECTION OF FRUITS FOR LARGE GARDENS.

WE resume this subject from p. 150; and now give the more extended lists which have been compiled for large gardens. The plan adopted on the previous occasions has been again followed in making up the returns. It is somewhat remarkable how strongly the current of opinion has set in favour of the old and well-known favourites. No doubt it has been felt that much more experience is required with the newer sorts before they can be recommended for general purposes:—

Votes. BEST 9 PEACHES.

14. Barrington, 1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 14, 15, 16.
14. Bellegarde, 1, 2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 14, 15, 16.
14. Noblesse, 1, 2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 14, 15, 16.
14. Royal George, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 14, 15, 16.
12. Grosse Mignonne, 1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 16.
9. Walburton Admirable, 2, 4, 5, 9, 10, 11, 12, 14, 16.
6. Early York, 1, 2, 4, 6, 8, 10.
5. Late Admirable, 1, 2, 3, 7, 8.
4. Malta, 1, 3, 5, 15.
4. Stirling Castle, 8, 9, 11, 12.
4. Violette Hâtive, 7, 8, 10, 14.
3. Crawford's Early, 6, 9, 12.
3. Rivers' Early York, 3, 7, 15.
2. Acton Scott, 4, 8.
2. Alexandra Noblesse, 3, 10.
2. Dr. Hogg, 3, 5.
2. Princess of Wales, 3, 15.
2. Rivers' Early, 15, 16.
2. Salway, 14, 15 (for bottling).
1. Abec, 16.
1. Belle Beauce, 6.
1. Cooledge's Favourite, 4.
1. Crimson Galande, 10.
1. Desse Tardive, 9.
1. Dymond, 14.
1. Early Admirable, 12.
1. Early Alfred, 14.
1. Early Grosse Mignonne, 16.
1. Early Victoria, 11.
1. Frogmore Golden, 11.
1. Golden Rathripe, 7.
1. Lord Palmerston, 5.
1. Premier, 11.
1. Princess Louise, 2.

1. Têton de Vénus, 1.

1. Thames Bank, 6.

* * No. 13 did not vote.

BEST 9 NECTARINES.

16. Elruge, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, also as Oldenburg, 12, 14, 15, 16.
14. Violette Hâtive, 2, 3, 4, 5, 7, 8, 9, 10, 11, 12, 14 (two), 15, 16.
12. Downton, 1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 15.
12. Pitmaston Orange, 1, 2, 3, 5, 7, 8, 9, 10, 12, 14, 15, 16.
11. Victoria, 1, 2, 3, 5, 8, 9, 10, 11, 14, 15 (very late), 16.
8. Murrey, 1, 3, 7, 8, 10, 11, 12, 14.
8. Pine-apple, 2, 3, 7, 8, 9, 11, 14, 15.
7. Balgowan, 1, 2, 4, 5, 6, 9, 16.
7. Prince of Wales, 2, 9, 10, 11, 14, 15 (late), 16.
6. Hardwicke, 4, 5, 6, 7, 9, 12.
6. Rivers' Orange, 4, 6, 7, 10, 12, 16.
5. Roman, 4, 7, 8, 12, 14.
4. Hunt's Tawny, 2, 4, 5, 12.
3. Albert Victor, 5, 10, 15.
3. Early Newington, 1, 4, 6.
2. Albert, 3, 6.
2. Lord Napier, 15, 16.
2. Rivers' White, 6, 16.
2. White, 1, 8.
1. Bowden, 2.
1. Crickett, 6.
1. Late Melting, 1.
1. Newington, 3.
1. Peterborough (Vermash), 11.

* * No. 13 did not vote.

BEST 9 PLUMS.

16. Green Gage, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16.
14. Coe's Golden Drop, 1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 16.

14. Jefferson, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 13, 14, 15, 16.
12. Victoria, 1, 2, 3, 4, 5 (k), 7 (k), 8, 9, 11, 13, 14, 16.
10. Kirke's, 1, 3, 4, 9, 10, 11, 13, 14, 15, 16.
6. Early Rivers, 2, 3, 5 (k), 10, 15, 16.
5. Damson, 1, 7, 8, 9, 12.
5. Denniston's Superb, 5, 6, 7, 9, 10.
5. Diamond, 5 (k), 6, 7 (k), 12, 15.
5. Transparent Gage, 2, 3, 10, 14, 16.
4. Early Orleans, 5 (k), 11, 13, 15.
4. Mitchelson's, 3, 4, 6, 13.
4. Prince of Wales, 4, 6, 8, 10.
4. Reine Claude de Bavay, 1, 2, 7, 9.
4. Washington, 11, 12, 13, 14.
2. Blue Impératrice, 8, 12.
2. Denbigh (Cox's Emperor), 4, 16.
2. Early Favourite, 4, 7.
2. Orleans, 8, 12.
2. Pond's Seedling, 1, 6.
2. Prince Englebert, 2, 15.
2. Purple Gage, 1, 11.
2. White Magnum Bonum, 5 (k), 12.
1. Autumn Compôte, 2.
1. Belgian Purple, 14.
1. Belle de Septembre, 2.
1. Bryanston Gage, 6.
1. Clustered Damson, 10.
1. Drap d'Or, 14.
1. Fotheringham, 11.
1. Frogmore Orleans, 11.
1. Gisborne's, 8.
1. Huling's Superb, 3.
1. Italian Prune (Fellemborg), 15.
1. July Green Gage, 16.
1. Kentish Damson, 12.
1. McLaughlin, 15.
1. Perdrigon Violet Hâtif, 9.
1. Standard of England, 12.

* * No. 13 voted only for 8 sorts.

BEST 9 CHERRIES.

13. Black Tartarian, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 14, 15, 16.
13. Elton, 1, 2, 3, 6, 7, 8, 9, 10, 11, 12, 14, 15, 16.
13. Morello, 1, 2, 3, 4, 6, 7 (k), 8, 9, 10, 12, 14, 15, 16.
12. May Duke, 1, 3, 4, 5, 7, 8, 9, 10, 11, 12, 14, 15.
8. Bigarreau Napoléon, 2, 4, 5, 7, 10, 11, 14, 15.
7. Black Eagle, 1, 5, 7, 11, 12, 14, 16.
7. Frogmore Early Bigarreau, 6, 7, 8, 9, 11, 14, 16.
6. Bigarreau, 1, 3, 9, 11, 12, 16.
4. Belle d'Orléans, 3, 4, 9, 12.
4. Black Heart, 8, 9, 11, 12.
4. Governor Wood, 2, 10, 12, 16.
3. Early Purple Gean, 3, 7, 15.
3. Kentish, 7 (k), 8, 12.
3. Knight's Early Black, 2, 9, 16.
3. Late Duke, 3, 4, 15.
2. Adams' Crown, 1, 6.
2. Florence, 5, 6.

2. Monstrous Heart, 4, 10.
2. Reine Hortense, 3, 14.
2. Royal Duke, 4, 11.
2. Tradescant's Heart (Large Black Bigarreau), 5, 10.
2. Werder's Early Black, 2, 16.
2. White Heart, 1, 8.
1. Archduke, 5.
1. Bedford Prolific, 15.
1. Belle Magnifique, 2.
1. Bigarreau de Hildesheim, 1.
1. Bigarreau de Hollande, 14.
1. Bigarreau Jaboulay, 5.
1. Burghley Seedling, 8.
1. Cleveland Bigarreau, 10.
1. Delicate, 6.
1. Early Bigarreau, 4.
1. Harrison's Heart (White Bigarreau), 5.
1. Jeffrey's Duke, 6.
1. Mary, 6.
1. Nouvelle Royale, 2.
1. Rivers' Early Black, 7.
1. Waterloo, 15.

* * No. 13 did not vote.

BEST 9 APRICOTS.

25. Moorpark, 1 (four), 2, 3, 4, 5, 6, 7 (three), 8, 9, 10, 11, 12, 14 (six), 15, 16.
13. Hemskerk, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 14, 15, 16.
12. Kaisha, 1, 2, 3, 4, 5, 6, 7 (two), 9, 10, 14, 15.
9. Royal, 4, 5, 6, 9, 10, 11, 12, 15, 16.
8. Orange, 1 (two), 2, 3, 4, 8, 11, 12.
8. Shipley's, 2, 3, 4, 6, 10, 11, 15, 16.
7. Breda, 1, 2, 3, 8, 9, 12, 15 (for preserving).
7. Large Early, 4, 6, 7, 9, 11, 12, 16.
6. Peach, 2, 3, 4, 5, 10, 16.
5. Large Red, 1, 5, 6, 10, 16.
5. Musch Musch, 3, 4, 8, 9, 12.
5. Roman, 2, 5, 9, 11, 12.
3. Early Moorpark, 5, 15, 16.
3. Pine-apple, 7, 12, 16.
2. Alsace, 6, 10.
2. Frogmore Seedling, 7, 14.
2. Oullins Early Peach, 6, 15.
2. St. Ambroise, 10, 15.
2. Turkey, 8, 12.
1. Angoumois Hâtif, 2.
1. Beaugé, 5.
1. Brussels, 3.
1. Frogmore Large, 11.
1. Frogmore Late, 11.
1. Portugal, 9.

* * No. 8 only voted for five; No. 12 voted for ten; No. 13 did not vote.

BEST 24 APPLES (6 Kitchen marked *).

15. Blenheim Pippin, 1*, 2, 3, 4, 6, 7 (two), 8, 9, 10, 11, 13*, 14, 15*, 16.
15. Cox's Orange Pippin, 1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 14, 15, 16.
14. Dumelow's Soedling, 2*, 3*, 4*, 5*, 6*, 8*, 9*, 10, 11*, 12*, 13*, 14, 15*, 16*.
13. Ribston Pippin, 1, 2, 3, 4, 6, 7, 8, 9, 10, 13, 14, 15, 16.

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| <p>12. Kerry Pippin, 2, 3, 4, 5, 6, 7, 8, 10, 12, 13, 14, 15.
 11. Court-pendu-plat, 1, 2, 3, 4, 5, 6, 11, 12, 13, 14, 16.
 11. King of the Pippins, 2, 3, 4, 5, 6, 7, 8, 9, 11, 13, 14.
 11. Lord Suffield, 1*, 2*, 3*, 4*, 7, 8*, 11*, 13*, 14, 15*, 16*.
 10. Sturmer Pippin, 1, 2, 3, 5, 6, 7, 9, 12, 15, 16.
 9. Alfriston, 1*, 3*, 6*, 9*, 11*, 12*, 13*, 14, 16.
 9. Margil, 1, 5, 9, 10, 12, 13, 14, 15, 16.
 8. Claygate Pearmain, 1, 3, 5, 8, 9, 10, 11, 13.
 8. Scarlet Nonpareil, 2, 4, 6, 7, 8, 10, 11, 12.
 7. Adams' Pearmain, 2, 3, 4, 6, 7, 12, 16.
 7. Court of Wick, 3, 4, 5, 9, 12, 13, 14.
 6. Cockle Pippin, 2, 6, 8, 10, 11, 12.
 6. Golden Pippin, 1, 8, 9, 10, 12, 16.
 6. Irish Peach, 1, 2, 3, 13, 15, 16.
 6. Lord Burghley, 4, 6*, 7, 10, 15, 16.
 6. Nonpareil, 3, 4, 9, 10, 13, 14.
 6. Sykehouse Russet, 1, 5, 9, 13, 14, 15.
 5. Golden Noble, 3, 6, 7, 10, 11*.
 5. Yorkshire Greening, 3*, 4*, 8*, 9*, 13*.
 4. Ashmead's Kernel, 1, 2, 6, 10.
 4. Cornish Gilliflower, 1, 8, 12, 14.
 4. Cox's Pomona, 9*, 11, 15, 16*.
 4. Devonshire Quarrenden, 1, 9, 13, 16.
 4. Dutch Mignonne, 3, 5*, 8, 9.
 4. Golden Reinette, 2, 12, 15, 16.
 4. Keswick Codlin, 5*, 7*, 9*, 10.
 4. Northern Greening, 2*, 10, 14, 15*.
 4. Pearson's Plate, 1, 5, 7, 12.
 4. Rymer, 2*, 3, 6, 14.
 4. Sam Young, 6, 7, 10, 12.
 4. Winter Hawthornden, 1*, 7*, 10, 14.
 4. Wyken Pippin, 3, 10, 14, 15.
 3. Fearn's Pippin, 2, 8, 11.
 3. Golden Harvey, 3, 4, 16.
 3. Hawthornden, 3*, 6*, 8*.
 3. Lamb Abbey Pearmain, 1, 4, 13.
 3. Melon, 5, 12, 15.
 3. Northern Spy, 14, 15, 16.
 3. Reinette du Canada, 1*, 5*, 7.
 3. Waltham Abbey Seedling, 2*, 4*, 16.
 3. Warner's King, 3*, 10, 16*.
 2. Boston Russet, 5, 7.
 2. Braddick's Nonpareil, 9, 11.
 2. Cellini, 15*, 16*.
 2. Duke of Devonshire, 5, 16.
 2. Early Harvest, 12, 15.
 2. Early Julien, 2, 5*.
 2. Emperor Alexander, 8*, 16*.
 2. French Crab (Winter Greening), 6*, 9.
 2. Frogmore Prolific, 4*, 11.
 2. Gipsy King, 4, 11.
 2. Golden Winter Pearmain, 11, 16.
 2. Gravenstein, 2, 9.
 2. Joanneting, 1, 8.
 2. London Pippin, 8, 13.
 2. Mannington's Pearmain, 10, 15.
 2. Nelson's Glory, 6, 9*.
 2. Nonesuch, 6, 10.</p> | <p>2. Northern Spy, 1, 7.
 2. Rosemary Russet, 11, 12.
 2. Stamford Pippin, 6*, 8.
 2. White Calville, 9, 15.
 2. White Nonpareil, 5, 10.
 2. Wormsley Pippin, 2*, 8.
 1. Aromatic Russet, 13.
 1. Baddow Pippin, 14.
 1. Beauty of Kent, 14.
 1. Bedfordshire Foundling, 1*.
 1. Bess Pool, 1.
 1. Betty Geeson, 15*.
 1. Caraway Russet, 11.
 1. Cat's Head, 8*.
 1. Cobham, 15.
 1. Coe's Golden Drop, 5.
 1. Cornish Aromatic, 10.
 1. Crofton Scarlet, 14.
 1. Downton Nonpareil, 7.
 1. Dredge's Fame, 6.
 1. Early Strawberry, 5.
 1. Ecklinville, 11*.
 1. Eve, 1.
 1. Flower of Kent, 12*.
 1. Gloria Mundi, 7*.
 1. Golden Knob, 12.
 1. Golden Russet, 8.
 1. Gooseberry Pippin, 12*.
 1. Hanwell Souring, 14.
 1. Hollandbury, 12*.
 1. Hornead Pearmain, 4.
 1. Hubbard's Pearmain, 6.
 1. Ingestrie Pippin, 13.
 1. Ingestrie Yellow, 2.
 1. Jefferson's, 11.
 1. Kedleston Pippin, 9.
 1. Kentish Fill-basket, 7*.
 1. Lemon Pippin, 8.
 1. Lodgemore Nonpareil, 5.
 1. Manks Codlin, 13*.
 1. Mère de Ménage, 14.
 1. Oslin, 2.
 1. Pennington's Seedling, 9.
 1. Red Astrachan, 15.
 1. Red Juneating, 11.
 1. Reinette Van Mons, 5.
 1. Roundway Magnum Bonum, 4*.
 1. Royal Pearmain (Herefordshire P.), 11.
 1. Small's Admirable, 11*.
 1. Striped Beefing, 7*.
 1. Tower of Glammis, 5*.
 1. Winter Majeting, 7*.
 1. Winter Pearmain, 3.
 1. Winter Quoining, 12*.
 ** No. 4 only voted for twenty-one; Nos. 10 and 14 did not mark any for kitchen use; No. 13 only voted for twenty-two.
 BEST 28 PEARS (4 Stewing marked*).
 16. Winter Nelis, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16.
 14. Beurré de Rance, 1, 2, 3, 6, 7, 8, 9, 10, 11*, 12, 13, 14, 15, 16.
 14. Glou Morceau, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 16.</p> |
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| <p>14. Joséphine de Malines, 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 12, 14, 15, 16.</p> <p>14. Louise Bonne of Jersey, 1, 2, 3, 5, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16.</p> <p>14. Marie Louise, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 13, 14, 15, 16.</p> <p>14. Ne Plus Meuris, 1, 2, 3, 4, 5, 6, 7, 8,* 10, 11, 12, 13, 14, 16.</p> <p>14. Williams' Bon Chrétien, 1, 2, 3, 4, 5, 7, 8, 9, 10, 11, 13, 14, 15, 16.</p> <p>13. Easter Beurré, 1, 2, 3, 4, 5, 6, 7, 8, 9, 12, 13, 14, 16.</p> <p>13. Thompson's, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 14, 15, 16.</p> <p>13. Uvedale's St. Germain, 1*, 2*, 3*, 4*, 5*, 6*, 7*, 8*, 9*, 10*, 11*, 15*, 16*.</p> <p>12. Beurré Diel, 1, 2, 3, 6, 7, 8, 9, 10, 11, 12, 13, 16.</p> <p>12. Catillac, 1*, 2*, 3*, 4*, 5*, 6*, 8*, 10*, 11*, 12*, 15*, 16*.</p> <p>12. Jargonelle, 1, 2, 3, 5, 8, 9, 11, 12, 13, 14, 15, 16.</p> <p>12. Passe Colmar, 1, 3, 5, 6, 7, 8, 10, 11, 12, 13, 14, 15.</p> <p>11. Beurré d'Amanlis, 2, 3, 5, 6, 7, 8, 9, 10, 12, 15, 16.</p> <p>9. Beurré Superfin, 2, 4, 6, 7, 10, 12, 14*, 15, 16.</p> <p>9. Doyenné du Comice, 2, 3, 4, 6, 10, 11, 14, 15, 16.</p> <p>9. Knight's Monarch, 1, 3, 4, 5, 7, 9, 11, 14, 16.</p> <p>9. Van Mons Léon le Clerc, 1, 3, 4, 5, 6, 11, 13, 14*, 16.</p> <p>8. Beurré Bosc, 1, 2, 4, 5, 9, 11, 12, 13.</p> <p>7. Bergamotte d'Esperen, 4, 5, 6, 8, 10, 15, 16.</p> <p>7. Duchesse d'Angoulême, 1, 4, 7, 8, 9, 12, 13.</p> <p>7. Fondante d'Automne, 1, 2, 4, 7, 8, 11, 15.</p> <p>7. Seckle, 1, 3, 10, 11, 12, 13, 14.</p> <p>7. Zéphirin Grégoire, 3, 4, 5, 6, 12, 15, 16.</p> <p>6. Beurré Sterckmans, 1, 3, 6, 9, 14, 16.</p> <p>6. Comte de Lamy, 1, 4, 5, 8, 14*, 15.</p> <p>6. Verulam, 1*, 2*, 4*, 6*, 9*, 14*.</p> <p>5. Beurré d'Aremberg, 7, 9, 11, 13, 14.</p> <p>5. Beurré Hardy, 3, 6, 8, 10, 16.</p> <p>5. Conseiller de la Cour, 2, 5, 6, 10, 12.</p> <p>5. Gansel's Bergamot, 1, 3, 7, 8, 9.</p> <p>4. Huyshe's Prince of Wales, 5, 7, 8, 9.</p> <p>4. Jersey Gratioli, 4, 10, 11, 15.</p> <p>4. Suffolk Thorn, 2, 6, 7, 16.</p> <p>4. Vicar of Winkfield, 7*, 9, 11*, 15*.</p> <p>3. Bezi d'Heri, 6*, 9*, 16*.</p> <p>3. British Queen, 8, 9, 11.</p> <p>3. Citron des Carmes, 1, 2, 15.</p> <p>3. Forelle, 4, 10, 12.</p> <p>3. Hacon's Incomparable, 3, 12, 14.</p> <p>3. Marie Louise d'Uccle, 2, 10, 16.</p> <p>3. Winter Franc Réal, 3*, 9*, 12*.</p> | <p>2. Beurré Clairgeau, 13, 15 (size and colour).</p> <p>2. Beurré de l'Assomption, 2, 5.</p> <p>2. Beurré Giffard, 4, 5.</p> <p>2. Black Worcester, 7*, 16*.</p> <p>2. Chaumontel, 6, 9.</p> <p>2. Doyenné d'Été, 6, 15 (earliest).</p> <p>2. Flemish Beauty, 2, 3.</p> <p>2. Gilogil, 2*, 12*.</p> <p>2. Huyshe's Victoria, 1, 11.</p> <p>2. Léon le Clerc de Laval, 5*, 15* (latest).</p> <p>2. Napoléon, 6, 11.</p> <p>2. St. Germain, 8*, 13.</p> <p>2. Spanish Bon Chrétien, 1*, 12*.</p> <p>2. Urbaniste, 2, 4.</p> <p>1. Alexandre Bivort, 6.</p> <p>1. Althorp Crasanne, 1.</p> <p>1. Aston Town, 13.</p> <p>1. Baronne de Mello, 4.</p> <p>1. Bellissime d'Hiver, 5*.</p> <p>1. Beurré Bachelier, 10.</p> <p>1. Beurré d'Anjou, 5.</p> <p>1. Beurré Duhaume, 14.</p> <p>1. Beurré Léon le Clerc, 15.</p> <p>1. Beurré Spence, 8.</p> <p>1. Bezi Mai, 3*.</p> <p>1. Bishop's Thumb, 15.</p> <p>1. Brown Beurré, 12, 13.</p> <p>1. Comte de Flandre, 10.</p> <p>1. Crasanne, 7.</p> <p>1. Délices d'Hardenpont, 7.</p> <p>1. Doyenné d'Alençon, 11.</p> <p>1. Duchesse d'Orléans, 5.</p> <p>1. Dunmore, 8.</p> <p>1. Durandean, 10.</p> <p>1. Epine du Mas, 11.</p> <p>1. Eyewood, 8.</p> <p>1. Flemish Bon Chrétien, 4*.</p> <p>1. Fondante de Mars, 10*.</p> <p>1. General Todtleben, 9.</p> <p>1. Golden Russet, 11.</p> <p>1. Huyshe's Prince Consort, 11.</p> <p>1. Jean de Witte, 14*.</p> <p>1. L'Inconnue, 5.</p> <p>1. Madame Treyve, 15.</p> <p>1. Morel, 10*.</p> <p>1. Nouveau Poiteau, 4.</p> <p>1. Nouvelle Fulvie, 9.</p> <p>1. Pitmaston Duchesse d'Angoulême, 16.</p> <p>1. Prince Albert, 12.</p> <p>1. Summer Compôte, 7*.</p> <p>1. Swan's Egg, 13.</p> <p>1. Winter Crasanne, 14.</p> <p>1. Yat, 15.</p> |
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* * No. 13 only voted for twenty-one, and marked none for stewing; No. 14 only voted for twenty-four.

BOUVARDIA VREELANDII (DAVISONI).

THIS valuable decorative plant is a white-flowered sport from the hybrid *Bouvardia Hogarth*, than which, we learn, it is more prolific of blossom. It originated in the American gardens, and was sent out, by different parties, under the two names above quoted. They were at first said to be, though

similar, sufficiently distinct; but those who have grown them extensively in this country find them to be identical. It is, however, a most valuable decorative plant, as our figure, for which we have to thank Messrs. E. G. Henderson and Son, sufficiently shows. We lately saw it in great quantity in the Royal Ascot Nursery,



BOUVARDIA VREELANDII (DAVISONI).

and Mr. Standish informs us that it is easily grown in rich, light soil, abounding in leaf-mould, and with a night temperature of about 50° in winter. During summer the plants thrive in low, well-aired houses, having a north aspect.—T. M.

FRUIT ELECTIONS.

FEEL much interested in the Fruit Elections, the results of which are now being published in your pages, and beg to offer my opinion thereon, and to add a few other observations on the lists generally, especially as regards the Apples, Pears, and Plums. Taking the first list as it stands (p. 122), I

have pleasure in recording my vote in favour of the *Royal George Peach*, but to lengthen the season of good Peaches, I would place *Walburton Admirable* second. Of *Nectarines*, I would place *Violette Hâtive* first, and give it *Hunt's Tawny* as a partner, because this last is the hardiest, and one of the best of *Nectarines*. As regards *Apricots*, I do not know that I could much better the list, excepting to place the *Orange* at bottom, and as a preserving sort. Amongst *Cherries*, I should be inclined to give *Black Tartarian* the first place; *May Duke* and *Elton* to follow. Of *Red Currants*, I place *Cerise*, or *Long-branched Red*, first, and *Raby Castle* second; of *White*, the *Victoria*; of *Black*, I would leave *Black Naples* in the first place, but would highly recommend *Black Sweet-fruited*, as a sort that hangs longer upon the tree, and is much sweeter and richer in flavour, and the best dessert sort. Among *Gooseberries*, the *Warrington* may be allowed his place of pride, although as a richly-flavoured sort I would place *Red Champagne* first, *Whitesmith* third, *Goldfinder* fourth; and for the four heaviest, *London*, red, *Leveller*, yellow, *Stockwell*, green, and *Antagonist*, white.

Of *Plums* (for cottagers), I think *Victoria*, *Black Morocco*, *Goliath*, *New Orleans*, *Mitchelson's*, and *Reine Claude de Bavay* would be the best, as combining earliness, lateness, and great bearing, with good flavour. As regards *Pears*, I would suggest that the list should be as under, viz.:—Autumn sorts: *Beurre Superfin*, *Louise Bonne*, *Doyenné du Comice*. Winter sorts: *Joséphine de Malines*, *Monarch*, *Bergamotte d'Esperen*. For most places south of Lincoln, I think the six pears above named would be found generally the most useful, especially if grown on Quince stocks where the soil is either heavy or wet. Of *Apples*, the six best for cottagers are, in my estimation, *Cellini*, *Hawthornden*, *Cox's Pomona*, *Golden Noble*, *Lord Suffield*, and *Gravenstein*; these are all good eating, good-looking, good for market, of large size, and great bearers, the first being, in my opinion, unsurpassed for size, fertility, beauty, and usefulness, the young trees commencing to bear when two years old. I am too late with a list similar to those contributed by your other correspondents, as I overlooked Mr. Fish's excellent proposition, and was unaware of it until I received the published lists. I add lists for the larger selection. The following I consider the best selection of fruits calculated for cultivation south of Birmingham:—

6 *Peaches*.—*Royal George*, *Belle Beauce*, *Barrington*, *Noblesse*, *Bellegarde*, *Walburton Admirable*.

6 *Nectarines*.—*Elruge*, *Hunt's Tawny*, *Red Roman*, *Hardwicke*, *Pitmaston*, *Old White*.

6 *Apricots*.—*Moorpark*, *Peach*, *Large Early*, *Kaisha*, *Hemskerk*, *St. Ambroise*.

6 *Plums*.—*Angelina Burdett*, *Coe's Golden Drop*, *Green Gage*, *Golden Esperen*, *Guthrie's Late*, *Jefferson*.

6 *Cherries*.—*Black Tartarian*, *May Duke*, *Adams' Crown*, *Bigarreau Napoléon*, *Black Eagle*, *Morello*.

12 *Apples*.—6 dessert: *Cox's Orange Pippin*, *Gravenstein*, *Baddow Pippin*, *Ashmead's Kernel*, *Nonpareil*, *Kerry Pippin*; 6 cooking sorts, but most of them also good dessert kinds: *Cellini*, *Cox's Pomona*, *Golden Noble*, *Adams' Pearmain*, *Gooseberry*, *Lady Derby*.

12 *Pears*.—3 very early: *Beurré de l'Assomption*, *Brandywine*, *Osband's Summer*. 3 autumn: *Beurré Superfin*, *Naquette*, *Madame Treyve*. 3 winter: *Bergamotte Lucrative*, *Bonne d'Ezée*, *Frédéric de Wurtemberg*. 3 very late: *Van Mons*, *Beurré de Jonghe*, *Joséphine de Malines*.

12 *Gooseberries*.—Red : Champagne, Keens' Seedling, Raspberry ; yellow : Early Sulphur, Leader, Perfection, Yellow Ball ; green : Overall, Keepsake, Pitmaston Green Gage ; white : Bright Venus, Early White, Whitesmith.

6 *Raspberries*.—Red Antwerp for flavour, Prince of Wales, Semper fidelis, Northumberland Fillbasket, October Red, Brinckle's Orange.

6 *Strawberries*.—Keens' Seedling, Dr. Hogg, President, Premier, Frogmore Late Pine, Vicomtesse Héricart de Thury.

I have endeavoured to give those sorts that combine earliness, lateness, free-growth, free-bearing, and high quality. I think these are the necessary features.

9 *Peaches*.—Royal George, Belle Beauce, Barrington, Bellegarde, Noblesse, Walburton Admirable, Crawford's Early, Exquisite, Grosse Mignonne.

9 *Nectarines*.—Elruge, Hunt's Tawny, Red Roman, Hardwicke, Pitmaston, Old White, Violette Hâtive, Downton, Impératrice.

9 *Apricots*.—Moorpark, Peach, Large Early, Kaisha, Hemskerk, St. Ambroise, Early Moorpark, Musch-Musch, Royal.

9 *Plums*.—Green Gage, Golden Drop, Reine Claude de Bavay, Jefferson, Denniston's Superb, Washington, Lawson's Golden Gage, Transparent Gage, Prince Englebert.

9 *Cherries*.—Black Tartarian, May Duke, Adams' Crown, Belle de Choisy, Black Bohemian, Early Amber, Frogmore Early Bigarreau, Jeffrey's Duke, Werder's Early Black, Morello.

12 *Cooking Apples*.—Cellini, Golden Noble, Pope's Apple, Alfriston, Beauty of Kent, Benoni, Tower of Glammis, Lord Derby, Ecklinville, Bedfordshire Foundling, Winter Pearmain, Broad-eyed Pippin.

12 *Dessert Apples*.—Aromatic Russet, Baddow Pippin, Barcelona Pearmain, Borsdorffer, Braddick's Nonpareil, Court of Wick, Court-pendu-plat, Quarrenden, Dutch Mignonne, Golden Harvey, Golden Winter Pearmain.

24 *Pears*.—6 early : Beurré de l'Assomption, Doyenné d'Eté, Brandywine, Osband's Summer, Beurré Giffard, Auguste Jurie. 6 autumn : Beurré Superfin, Madame Treyve, Lesbre, Beurré Flon, Williams' Bon Chrétien, St. Ghislain. 6 winter : Beurré Bachelier, General Todtleben, Serrurier, Comtesse d'Alost, Comte de Flandre, Glou Morceau. 6 latest : Beurré de Bollwiller, Basiner, Congrès Pomologique, Doyenné Flone Aîné, Prince Consort, Williams' d'Hiver. 6 stewing : Catillac, Gilgil, Amour, Angobert, De Livre, Chaptal.

I have given only those sorts which I have grown and tested here. Of course mine will differ a good deal from the lists offered by gardeners generally, as their collections are necessarily more limited than those of nurserymen, and therefore they have not the opportunity of testing and comparing so large a number of sorts. My own collection has afforded materials of an extended kind to select from ; and when I say that I now cultivate 1,200 sorts of Apples, and about 1,800 sorts of Pears, it will be seen how easy it would have been to have made a more extensive selection, but I adhered to the wish expressed at p. 70, with regard to the number of kinds. I have, in selecting these, tried to infuse as much new blood as possible, still adhering to sorts that have been well proved by myself and others. I therefore trust that the lists I present you with may benefit some of your readers.—JOHN SCOTT, *Merriott*.

CAMPANULA PYRAMIDALIS ROSEA, AND OTHER BORDER PLANTS.

IF all the showy plants in the mixed border, the *Campanula pyramidalis rosea* bears the bell here, at the present time. I planted out a few dozen plants of it in the spring, and many of them have grown from 3 ft. to 3½ ft. in height, with many stems to each plant, and all are now in full flower. A few dozens of plants were grown in large pots, and flowered in the greenhouse

and conservatory, and they have likewise been objects of great beauty, and flowered earlier than those in the borders. To have this fine plant strong and fit for planting out in the spring, the seeds must be sown in April or May, and the plants kept growing thinly in rows in the open air till the autumn, when they must be potted into pretty large pots, and wintered in a cold frame or greenhouse. In the spring they may be planted out into the borders, and staked securely as soon as the stems begin to grow. Those grown in pots will be much benefited by watering them with weak manure-water before the flowering period, to make them grow tall and strong.

Another very fine new herbaceous plant, the *Dicentra chrysantha*, has flowered with me this summer, and when the plant gets larger, and becomes covered with its fine golden-yellow flowers, I believe it will be one of the very showiest border plants known.

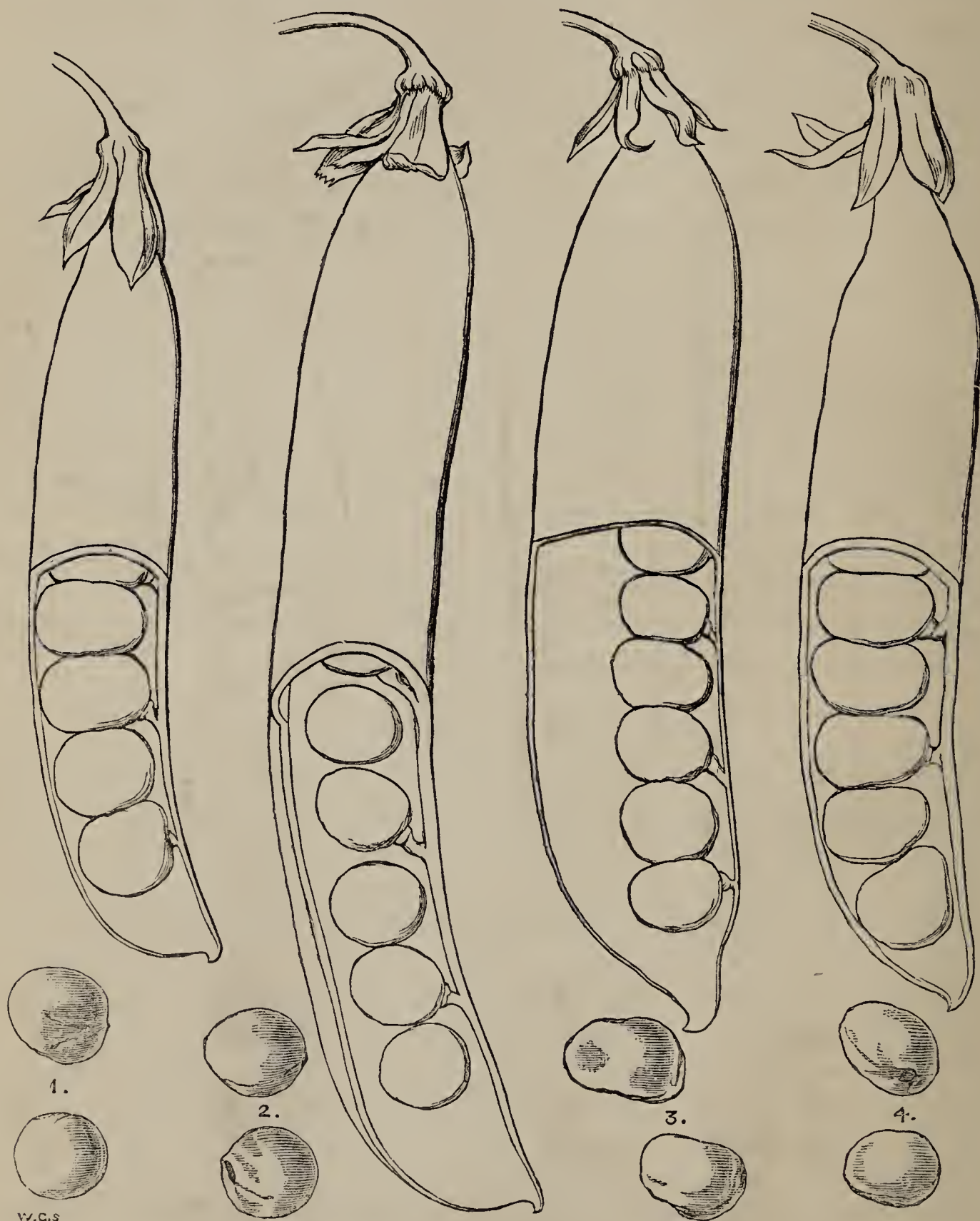
In the mixed border here, where the above plants are growing, there is likewise a fine show of seedling Antirrhinums, Aquilegias, and Pentstemons, with Fuchsia Riccartoni and Delphiniums for the tallest plants. Where many showy herbaceous flowers are wanted for cutting, for decorative purposes in the summer months, the above varieties of plants, with others, will furnish a grand supply, and a reserved mixed border in the kitchen garden or shrubbery ought to be set apart to grow them in. Where room for a reserve garden can be found, and when quantities of cut flowers are required, all the showy kinds of bedding and herbaceous plants could be grown there, without having recourse to the mixed borders or flower garden.—WILLIAM TILLERY, *Welbeck*.

LAXTON'S NEW PEAS:

HERE has been this season a great trial of Peas, by the Fruit and Vegetable Committee, in the new grounds of the Royal Horticultural Society at Chiswick. In all respects this trial has been most successful and satisfactory. Unfavourable as the season has been for most tender crops, in consequence of so much dripping wet, it has proved extremely favourable for Peas, which have seldom or never been seen under more favourable circumstances. These trials may therefore be looked upon as conclusive.

The indefatigable Laxton, the great Pea-maker of the day, has been reaping golden honours, having received no less than 8 First-class Certificates for his introductions, all of which are undoubted acquisitions in their respective classes. We have him to the front with the earliest, the latest, and the largest; and in the respective classes to which they belong, the several varieties are quite equal in flavour, if not superior, to any of the older sorts. We give illustrations of those to which First-class Certificates have been awarded by the Fruit Committee this season. If to these, we were to add those of previous years, viz., *Alpha*, *Supreme*, *Quantity*, and *Quality*, as well as *Prolific Long-pod*, all established favourites, we should make out a list of Laxton's Peas more than sufficient for the largest supply.

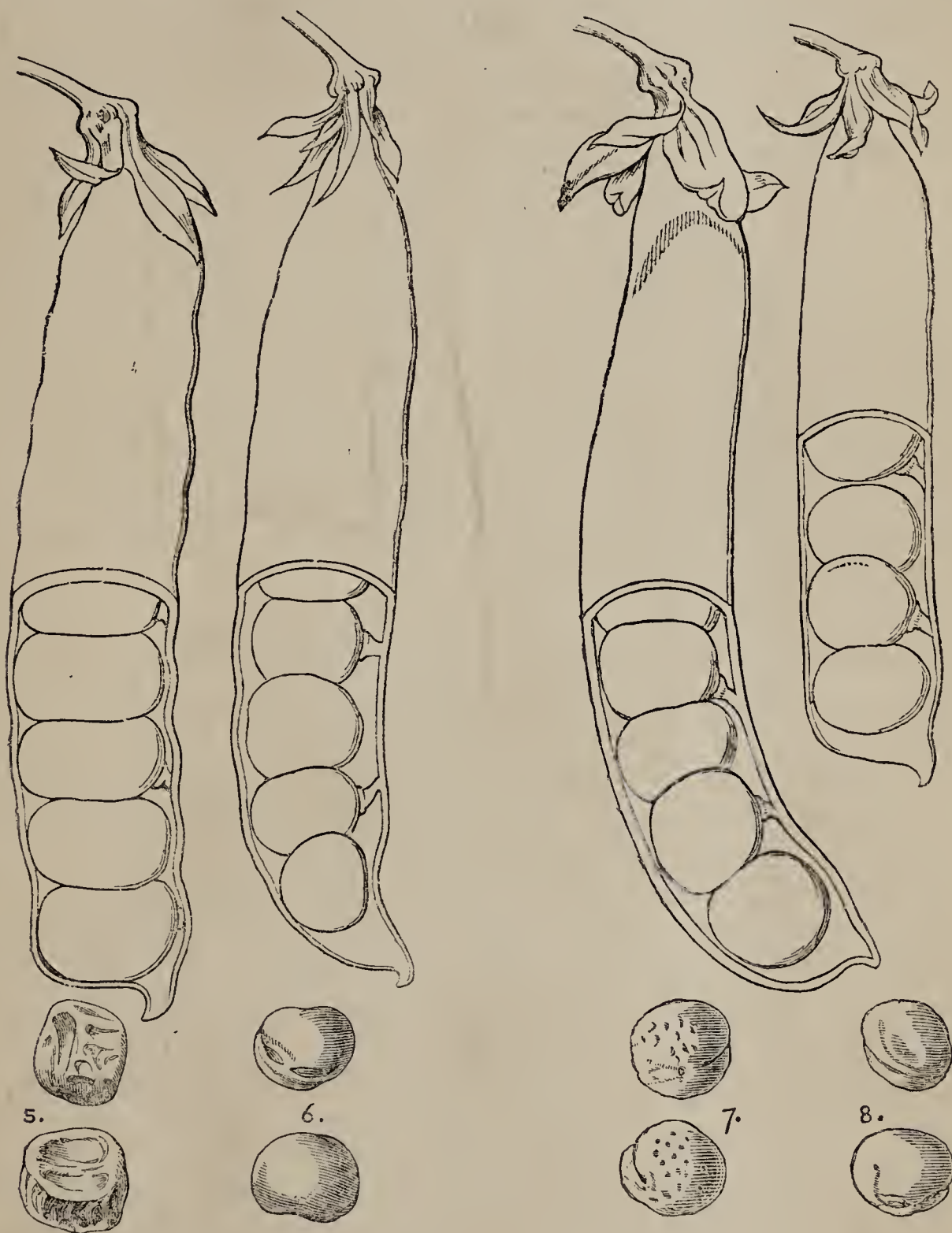
LAXTON'S WILLIAM I. (fig. 1).—Early green Marrow. Pods long, curved, rounded, well-filled, of a deep green colour, containing from 7 to 9 fair-sized deep green peas. Very handsome in appearance, but deficient in flavour, like all others of this class. Plant vigorous, $4\frac{1}{2}$ ft. to 5 ft. high, having the habit of the Frame



class more than that of Prizetaker, to which it properly belongs, producing the pods generally single, but frequently in pairs. Dried seed round, slightly indented, light green and white, mixed. This comes into use about 6 days after Dillistone's Early. A very excellent and first-class Pea.

LAXTON'S SUPERLATIVE (fig. 2).—Second-early Marrow. A cross raised

between Ne Plus Ultra and a hybrid of Supreme. Pods very large, about 8 in. long, slightly curved, rounded in form, and bulged out at the sides, sometimes flattened and irregular, containing from 8 to 10 large deep green peas, but not sufficiently large to fill the enormously large pods; flavour indifferent. Plant very robust, from 7 ft. to 8 ft. high, producing numerous pods, mostly in pairs. Dried seed light blue, parti-coloured, flattish. This comes into



use 14 days after Dillistone's. A very handsome Pea for exhibition purposes, having the largest pod of any Pea in cultivation.

LAXTON'S SUPPLANTER (fig. 3).—Second-early. A cross between Veitch's Perfection and Little Gem. Pods very large and broad, somewhat irregular and slightly curved, sickle-pointed, of a deep green colour, and containing from 7 to 9 very large peas of a fine green colour. Plant robust, branching, about 3 ft. in

height, with large deep green foliage, producing its pods in pairs. Dried seed light blue, flat, round, like the Imperials. This comes into use about 3 weeks after Dillistone's Early. A very handsome and prolific Pea; a great improvement on Scimitar.

LAXTON'S FILLBASKET (fig. 4).—Second-early Blue. A cross between Laxton's Standard and Supreme. Pods very long, curved, round, closely filled, of a bright green colour, containing from 8 to 10 very large deep green peas. Plant robust, branching, about 3 ft. in height, producing its pods generally in pairs. Dried seed round, blue. This comes into use about 15 days after Dillistone's Early. A very prolific and very handsome Pea.

LAXTON'S OMEGA (fig. 5).—Late green wrinkled Marrow. A cross between Ne Plus Ultra and Veitch's Perfection. Pods long, nearly straight, round, very closely filled, showing the peas in the pod up to both ends, of a very deep green colour, containing from 8 to 10 very large peas of a deep green colour, very sweet and excellent; inside of the pods deep green, like Ne Plus Ultra. Plant robust, about $2\frac{1}{2}$ ft. high, branching; foliage deep dark green, producing from 20 to 24 pods, in pairs. Dried seed deep green, wrinkled. This comes into use a day or two after Ne Plus Ultra, and a few days before Veitch's Perfection; but remains green, sweet, tender and good, several days later than either. A good name for this would have been Dwarf Ne Plus Ultra. A first-class dwarf green wrinkled Pea of the highest quality.

LAXTON'S UNIQUE (fig. 6).—Early dwarf green Marrow. A cross between Laxton's Prolific and Little Gem. Pods long, broad, slightly curved, scimitar-shaped, of a deep green colour, containing from 7 to 8 fair-sized peas. Plant having the habit of Tom Thumb, robust, about 18 in. or 2 ft. in height, producing from 8 to 10 pods, in pairs. Dried seed parti-coloured, blue and white. Comes into use 7 days after Dillistone's Early, and 2 days after Tom Thumb. A very excellent early dwarf blue Pea.

LAXTON'S DR. HOGG (fig. 7).—Early green wrinkled Marrow. A cross between Prolific Long-pod and Little Gem. Pods very handsome, long, much curved, round, of a bright green colour, very closely filled, containing in each from 8 to 10 deep green peas of excellent quality. Plant rather straggling, about 4 ft. in height, having the habit of the Frame class, producing from 10 to 12 pods, frequently in pairs, but sometimes singly. Comes into use 8 days after Dillistone's Early. Dried seed deep green, wrinkled. A very handsome Pea, prolific, and of good quality; the earliest of the deep green wrinkled Marrows.

LAXTON'S HARBINGER (fig. 8).—Early round Blue. A cross between Alpha and Ringleader. Pods smallish, round, tightly filled, in appearance very much like those of Ringleader and Invicta, containing from 6 to 8 peas of fair size, and of fine colour. The plant has the habit and character of Ringleader, and is about 3 ft. in height, producing singly from 7 to 8 pods on the stem. Dried seed pale blue, like Invicta. Comes into use 3 days before Dillistone's Early and Ringleader, and 6 days before Invicta. The very earliest Pea in cultivation.—A. F. B.

ROSES AND ROSE-CULTURE.

CHAPTER XII.—ON PRUNING.

IF the three principal conditions of success in Rose-culture,—(1) a suitable soil, (2) an appropriate selection of sorts, and (3) pruning, I regard the latter as the most important. The two former secure a favourable growth; but on skilful pruning hangs the ultimate aim of our labour,—an abundant crop of good flowers. To those who already understand the subject, a few simple rules may suffice; but for those who are seeking information, it would seem necessary to discuss the question in detail. To both, I submit four simple rules of practice, and shall afterwards follow out the subject for the use of those who may wish for more particular information.

1. Autumnal or perpetual-flowering Roses should be pruned more closely than the summer kinds; and the more constantly or the more abundantly a Rose flowers, the closer it should be pruned.

2. The summer-flowering kinds should be pruned strictly according to their rate of growth; the vigorous-growing Moss, Damask, Sempervirens, Hybrid China, and the like, should be pruned sparingly, or a too vigorous growth will be encouraged, which produces wood and leaves instead of flowers; the weak growers alone should be pruned closely; the moderate growers, in an intermediate way.

3. Thin-out the heads of *hardy* Roses in November, but leave the shortening of the shoots that remain after thinning, till March.

4. Do not thin-out or shorten the *tender* kinds (Tea-scented, &c.) till March, or the symmetry of the plants may be spoiled by the effects of the winter's frost.

To those who can grasp the difficulties of the situation by considering the above rules, I would say, "Read no further." But there are beginners, and it would be hardly honest to pass over this important operation with so slender a guide. It is too much the fashion now-a-days to pooh-pooh everything that gives rise to careful thought or nice discrimination in practice, the results of which are constantly apparent to the close observer. In gardening, as elsewhere, everything is easy to those who know, and knowledge may often be more economically acquired at the hands of others, than through our own experiments and failures. Pruning is an intricate art, the principles of which can scarcely be mastered without some little study. If there is any royal road to learning here, it has yet to be discovered. Let me, then, endeavour as briefly as possible to make the subject as plain and easy as I can.

If a beginner in Rose-culture were to approach an old Rose tree, with the view of pruning it, he would probably be puzzled with the multiplicity of shoots, branching out and crossing each other in every direction. He might even relinquish the task, from the difficulty of deciding *where to begin*. But I would not carry him thus suddenly into the heart of the difficulty. Let him begin with young plants, possessed of few shoots, such as are purchased from the nurseries.

Let him proceed step by step, and his knowledge will grow with his Rose trees. Suppose him to be about to prune a young bush or tree; he should be possessed of a sharp knife, and have his hands encased in thorn-resisting gloves. It is autumn, and he intends thinning-out only, but before he does this let him inform himself of the nature of the variety. Is it Perpetual? Are the flowers given forth few in number and far between, or are they produced abundantly and in rapid succession? Or is it a summer Rose; and if such, of vigorous, moderate, or weakly growth? Having answered these questions, if he will turn to the rules given above, he will discover how to proceed in each case. Next, let him study the tree about to be operated on, and mark out in his mind's eye a smaller or greater number of well-placed shoots, standing at about equal distances apart, so that he may realise a well-balanced head. These are to remain as permanent shoots: all others should be cut close to their base—and thinning-out is done. It should be noted here, that the more vigorous the growth of the variety, the greater should be the distances between these permanent shoots, in order to leave room for the free development of the broader masses of foliage.

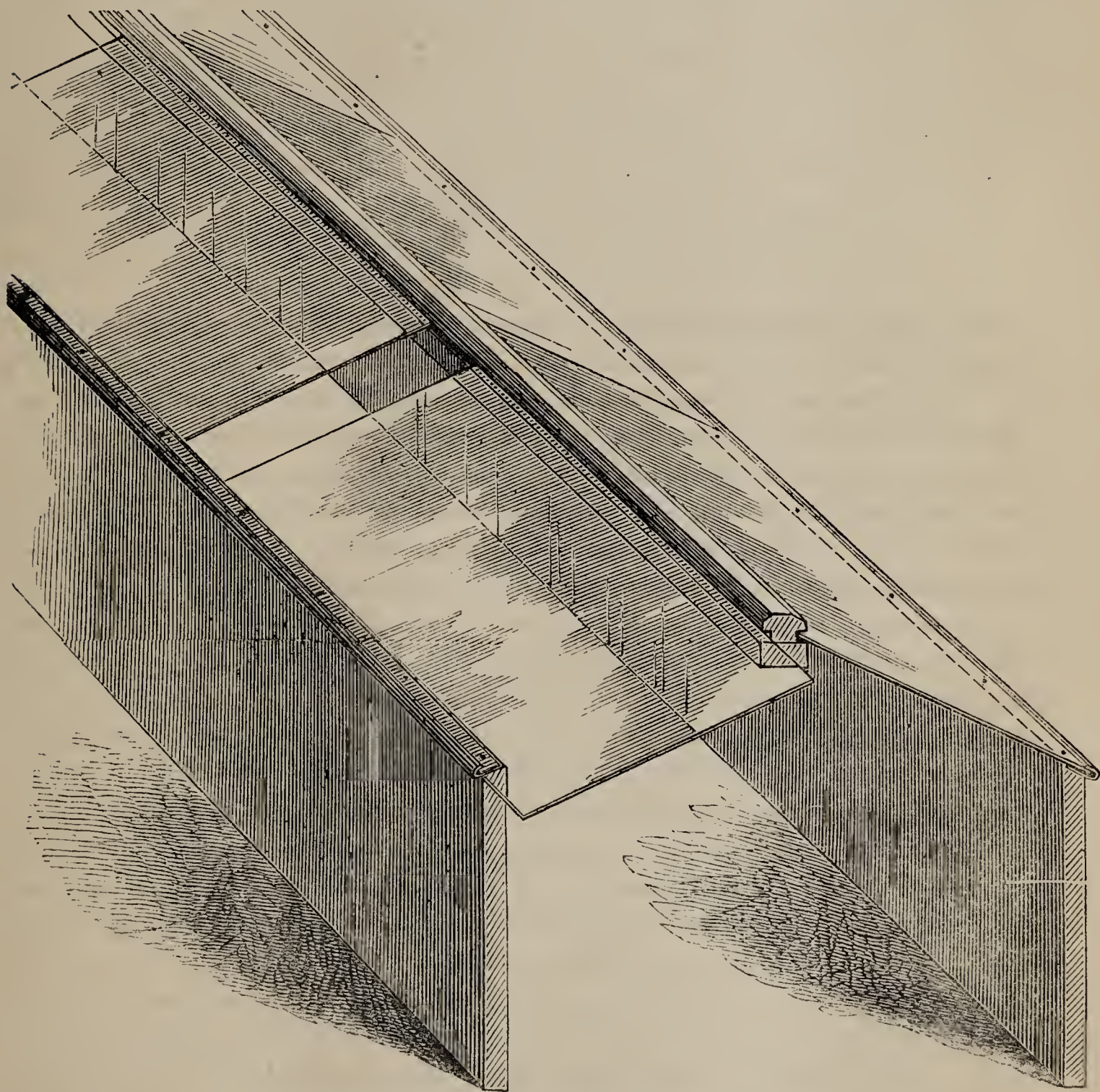
On the arrival of spring (March), the shoots left after the autumn thinning should be shortened. The same questions should be proposed as before, as to the nature of the variety. If it be a vigorous-growing summer kind, leave from six to eight eyes on each shoot; if moderate, three to five eyes; if weakly, two or three only. As to the autumnals, the vigorous-growing Hybrid Perpetuals and Bourbons may usually have from four to six eyes left on each shoot, the moderate and weakly from four to two eyes. The Perpetual Moss, Damask Perpetual, Chinese, and Tea-scented, which are mostly profuse and constant bloomers, can scarcely be pruned too closely; from one to three eyes on each shoot, according to the degree of vigour, will ensure an abundance of good flowers.

While I recommend thinning-out supernumerary shoots in autumn, and shortening those that are left in spring, as the safest and best practice, yet, if the shortening be done in autumn, the flowering will take place a few days earlier. But then the mild days often prevalent in winter induce the eyes to burst their cerements, and the young growth is liable to suffer more or less from subsequent frosts.—WILLIAM PAUL, *Paul's Nurseries, Waltham Cross, N.*

THE GRIMSTON PLANT PROTECTOR.

THE many forms of Plant Protectors which have sprung up within the last few years, do but indicate a want—that of shelter from our cold precarious spring—which is but too well-known amongst cultivators. That of which we append a woodcut, borrowed from the *Gardeners' Chronicle*, is, we think, one of the best forms which have appeared, on the grounds of combined simplicity, efficiency, and cheapness. Mr. Denning, the gardener at Grimston Park, informs us that he has had about 800 ft. of these cases in use for some time past, and his experience convinces him that they will be found exceedingly useful

to those who require vegetables or flowers either before or after the ordinary summer season. They forward crops about five weeks, and preserve them for a like period in the autumn—consequently they shorten the winter very considerably. By their use, he observes, “we were enabled to supply good firm well-blanced Cos Lettuces by the end of February this past season. We also find them useful for Potatos, Carrots, Turnips, French Beans, Radishes, Parsley,



GRIMSTON PLANT PROTECTOR.

Chervil, Mint, Mustard and Cress, early Celery, in fact, for almost everything which comes early in the season from France. We also use them for Strawberries, which are ripe now (June 7) under them; also for forwarding herbaceous plants, for cut flowers, such as Pinks, Lilies of the Valley, Violets, and other low-growing plants.”

The cost, labour included, Mr. Denning puts at about 10s. for each 8-ft. length complete, the two ends being closed. They require no putty and no glazing, are easily

shifted about from place to place, and are ventilated with great facility. Early in the season air is given at either end of the case by slipping a pane outwards; later on, the box is tilted by means of half a brick or a block of wood; as the season further advances, one or two panes are taken out altogether, and the remaining panes placed at regular intervals, leaving spaces between each pane for air, which air remains on night and day. They cause very little labour, and are not liable to breakage. After the beginning of May the plants under them require plenty of water, which can be easily applied by tilting the box, so as to allow the spout of the water-pot to enter at the ground-level. The uses to which cases of this kind can be put are both obvious and multifarious. Mr. Rendle, we understand, regards this form of Protector as an infringement of his patent.—T. M.

ON ARRESTING THE GROWTH OF LARGE TREES

BY DENUDING THEIR ROOT-BASE.

NO part of the organization of a tree is more delicately sensitive than the apparently rough and sturdy masses formed by the main root-limbs where they diverge from the central axis. Life is here most full of vigour, and highly responsive to every variation of heat, cold, drought, evaporation, nay, of light itself. It happens, not unfrequently, that some fine half-grown tree upon a lawn or foreground, is threatening soon to become inconveniently high and large for its place; and the owner is ever bewailing the vigour and rapid growth that must soon condemn it to the axe; even a whole line, or double line of trees, may be on the point of out-growing their proper size in reference to surrounding objects. Now, we cannot have recourse to root-pruning in the case of a half-grown forest tree, for it would not only be costly, but exceedingly uncertain in its effects. If, however, we apply a check to the sensitive surface of the main roots, just where they part from the central axis at the bottom of the stem, and admit air, light, heat, cold, and evaporation there, by removing turf and soil,—perhaps but a single barrowful,—we shall soon perceive very remarkable effects. No unsightly weakness of foliage will be visible the following summer, but the terminal shoots will be more or less shortened and arrested, and they will prepare themselves for forming flower-buds to be developed in the next ensuing spring.

If we look a few months later, at the root-limbs thus laid bare, we shall be struck by their visible enlargement from fresh deposit of bark and woody matter over the exposed surface. The great plant, whose economy we had disarranged by taking away but a few spadefuls of earth and herbage, has applied itself first and foremost to make good that loss, and to guard its most important central organism from evaporation and sudden alternations of temperature, by depositing a fresh layer of bark and alburnum, of more than ordinary thickness, upon the main root-space. To do this, it has transferred its vegetative energies from the upper spray, and bestowed them on more needful work below. Such is the wonderful providence which guides arboreal vegetation. When summer again comes round, flower and seed will probably be found upon the tree, even if it

never bore any before ; and if it formerly bore some, there will henceforward be considerably more, whenever the seasons permit. This free-flowering and seeding will again tend greatly to keep the upper growth and extension of the head and branches at a minimum. The loss of a single barrow of soil withdrawn may not always produce the full effect desired ; but two or three certainly will.

If the tree be a Lime or an Elm, ten to one but it puts forth many vigorous sucker-like shoots from the exposed surfaces. If so, let them remain ; every one of them will deposit its contribution of matured descending sap and alburnous matter upon the main root from which it springs ; and will intercept its proportion of ascending sap from rising towards the head, and so help to prevent the tree from becoming taller than we wish. Where high hedge-banks have been thrown down, but the hedge-row trees have been left standing in a park or paddock, how bold, majestic, and picturesque the development of their root-swell becomes ! The trees have a hard struggle for a time, to replace by deposit of fresh wood the weight and protection of the hedge-bank, which formerly shielded their bases ; but in time the balance of vegetation is restored, and then they go ahead again at the summit, as of yore.

When therefore we wish to keep a tree permanently at a minimum of upward growth, we must from time to time repeat the removal of some earth from its base and main root-space ; and we shall soon perceive that this root-space is becoming itself a most interesting feature of rugged and unwonted character. The topic has not been discussed, so far as I have seen, since Matthew wrote his admirable work on the *Cultivation of Naval Timber*, and counselled the exposure of the main roots of Larch trees in Scotland, to cause them to acquire abnormal proportions, and become fit for knee-timber to be used in ship-building.—R. CARR ELLISON, in *Gardeners' Chronicle* (abridged).

FLOWER-GARDEN MANAGEMENT.—AUGUST.

IF the weather be fine, the flower-garden will now look very gay, and every effort should be made to keep up as complete an appearance of neatness and high keeping as possible, by picking off dead leaves and flowers, and allowing no straggling growths or anything tending to give an untidy appearance, to remain. Cut out the decaying stalks of herbaceous and other plants, and continue to tie up all tall-growing plants that require it ; hoe, stir, and dress borders ; attend well to the watering of plants in baskets, vases, &c. If not already done, plant out seedling *Wallflowers*, *Sweet Williams*, *Rockets*, *Antirrhinums*, and all other hardy *Biennials* and *Perennials* into the borders they are intended to flower in next year. Prick out *Pink* pipings as soon as they are rooted, and continue to layer *Carnations* and *Picotees*. Cuttings of *Pansies* for the principal spring bloom should now be put in under glasses in a shaded situation. Get in a stock of cuttings of the principal *Bedding plants* as soon as possible. Cuttings of the different kinds of *Pelargoniums* should be put in as soon as they can be obtained without detriment to the beds ; these strike best in

a south border fully exposed to the sun. This is a good time to increase the stock of *Roses*, as cuttings of the young shoots now root freely in a little heat. Sweep and roll walks, and run the machine once a week over lawns.

IN-DOORS.—The large specimen *Hard-wooded plants*, that are set out-of-doors, should now be removed to a place where they will receive plenty of sun and air; otherwise, if left in the shade, the young growth will not get ripened. Plants intended to flower next spring should not have their shoots stopped after the beginning of the month. Attend to the plants in the houses; see they are properly watered, and give abundance of air both day and night. Attend regularly to the stopping, thinning, and tying-out of the plants in pits and frames, and shift such as require it. Give abundance of air during the day, and on mild nights remove the lights altogether, as the heavy dews which usually prevail at this season are very beneficial to them. Plants that have finished their growth, should have all the sun and air possible to ripen their wood. The show and fancy *Pelargoniums* which were cut down last month will now be pushing again; the soil should be shaken from them, and they should be potted into smaller pots, using a light compost: they should then be put into a pit or frame, and kept rather close and moist to encourage fresh growth. Attend well to the watering of *Zonal Pelargoniums*, *Fuchsias*, *Salvias*, *Gesneras*, and other *Soft-wooded plants* intended for autumn flowering. Keep *Balsams*, *Cockscombs*, *Amaranthuses*, &c., well watered. Continue to shift seedling *Cinerarias* and *Primulas* as they require it.—M. SAUL, *Stourton*.

NOTES ON PLUMS.

IF late years there have been several new and valuable kinds of plums introduced, but the flavour of some of them is not equal to that of some of the older sorts. For instance, the fine Green Gage flavour of *Coe's Seedling* or *Golden Drop* is far superior to that of the Washington and Jefferson, though they are both good of their kind; while the flavour of the *Prince of Wales* excels that of any of the Orleans family, to which it belongs. The *Jean d'Este*, though an old plum, deserves a passing notice, because it ripens as early as about the end of July; besides, being of bushy and fruitful habit, it is well adapted for pot-culture. Likewise the old neglected *Blue Perdrigon*, which is superior to some of the new kinds of blue gages. *Kirke's* is a great bearer, and of better quality than the old Imperial. The flavour of this and also that of the *Victoria* too closely resembles that of the *Magnum Bonum* or *Egg plum*, which at best is only a culinary sort.

I advert again to the *Coe's Seedling*, in order to mention that we are indebted to the late Mr. Coe, of Bury St. Edmund's, for that excellent plum. I have grown it for many years on walls in various aspects, and have always found it an abundant bearer, and the fruit of first-rate flavour. Last season I had the remains of a crop of this plum on a wall with a western aspect, at the end of October, while some of the fruit kept good in a close tin box among fern-leaves in the

fruit-room until the 20th of November, when the *Impératrices* began to shrivel like prunes. I may here mention an incident connected with the first notice of Mr. Coe's seedling plum :—He gave a specimen of the fruit to a friend, that he might try its merits ; but the Plum being unripe, it was put into his pocket, where he afterwards found it shrivelled ; but on the second bite, he said its flavour was next to that of the Green Gage. This accords with the belief that Coe's Golden Drop is an offspring of the Gage and Magnum Bonum. However this may be, the plum has all the good qualities of the first favourite, and none of the bad ones of the other. Cobbett, in his *Cottage Gardener*, makes a sensible remark when he says, "The Magnum Bonums are fit for nothing but tarts and sweetmeats ; 'magnum' is right enough, but as to 'bonum,' the word has seldom been so misapplied."

I wish to observe that our two best Plums were first brought into cultivation near Bury St. Edmund's. It is not my present purpose to go into the pedigree of the old or original tree of the Green Gage at Hengrave—whether it was a natural seedling, a French one, or an imported grafted tree ; suffice it to mention that it is considered to be the first of its kind in this country. I have grafted trees from scions off an old Green Gage-tree at Bury St. Edmund's, which was grafted from the original tree ; but the fruit does not differ from that of others in common cultivation, nor of those imported from France.—J. WIGHTON.

FRUIT CULTURE.—AUGUST.

IF the instructions already given have been carried out, very little will require to be done at present, beyond protecting and gathering all fruit as it ripens. If from a pressure of work, or any other cause, the *Summer pruning* and regulating of the young wood of fruit-trees have not been completed, no time should now be lost, in order that the wood may have all the sun and air possible. Stop the strong shoots of *Peaches* and *Nectarines*, and remove from all fruit-trees all superfluous wood not likely to be wanted another season. When the fruit begins to ripen, expose it as much as possible to the sun, by removing any leaves that may shade it. Protect all *ripe fruit* with hexagon netting, and mat *Gooseberries* and *Currants*. Cut away all the *Raspberry* canes that have done bearing. Continue to make fresh plantations of *Strawberries*, and dress old ones intended to remain another year.

IN-DOORS.—Give *Pine* plants that are swelling off their fruit liberal supplies of water, and occasionally of liquid manure, but withhold it as the fruit begins to ripen. The plants bearing fruit for the autumn and winter supply should, if possible, be all got together in one house before the end of the month ; they can then be better attended to. They should have a steady bottom-heat of about 85°, should be carefully attended to in watering, and should have a moist atmosphere. The plants intended to "show" in spring, should now be put into fruiting-pots, and the shifting of the general stock of successions should be completed before the end of the month. After shifting, the plants should be kept

rather close, and the atmosphere rather moist, until they begin to root freely into the fresh soil, when they should have abundance of air in fine weather, always giving it early in the forenoon, and closing up early in the afternoon. To *Vineries* having ripe or ripening grapes too much air cannot be given in dry weather. Keep a little fire-heat in late houses to ripen the fruit and the wood; stop all laterals and remove all superfluous growth. Towards the end of the month the lights may be removed from the early *Peach* house; when the fruit is all gathered in the late houses the trees should be well syringed, and air should be admitted freely to ripen the wood. Whilst the second crop of *Figs* is swelling, the trees require a deal of water, but when it begins to ripen the supply should be gradually reduced. If not already done, the *Strawberries* layered last month should at once be shifted into their fruiting-pots, and set in beds in an open situation where they can be properly attended to. Give *Melons* plenty of air and liberal supplies of water, and see that the bottom-heat does not get too low. See that *Cucumbers* have sufficient bottom-heat; stop, thin, and regulate the shoots; give air freely in fine weather, and water when required; sow for a winter supply.—M. SAUL, *Stourton*.

NOVELTIES, ETC., AT FLOWER SHOWS.

THE second great show of the Royal Botanic Society was held on June 19th, and owing to a Meeting of the Royal Horticultural Society falling on the same day, new things were not numerous in either place. At the former, three of Mr. Foster's new *Pelargoniums*, shown by Mr. C. Turner, namely, *Charles Dickens*, *Syren*, and *Purple Gem*, received First-class Certificates. These shall be fully described by and by. *H. P. Rose Annie Laxton* (F.C.C.) was shown in fine condition by Messrs. Paul and Son, and compared with other first-class Roses—which this season are not nearly up to their mark—was very promising indeed. It is a fine full flower, the centre deep rose, the circumference of the flower salmon-pink. *Meteor* (F.C.C.) and *Alice Maud Mary* (F.C.C.), both golden-edged *Variegated Zonal Pelargoniums*, finely coloured, and having bold, well-formed leaves, were shown by Messrs. E. G. Henderson and Son. Messrs. Dixon and Co., Hackney, had a basket of their new double *Petunia*, *King of Crimson*s; and Mr. Weatherill, a group of his new *Pelargonium*, *Captain Raikes*. Two new double *Pyrethrums*, *Marquis of Bute*, deep purplish-rose, and *Uzziel*, very pale pink, both large in size, and of full substance, were shown by Mr. T. S. Ware. A plant of Mr. Thomas Laxton's new double-crimson *Zonal Pelargonium Jewel*, was also present, the flowers full and nicely coloured, the foliage small, and the habit dwarf and compact. *Bertolonia superbissima* was shown in splendid condition among a group of new plants by Mr. William Bull; it is a very beautiful-leaved plant, with a great deal of distinctness of character, the leaves thickly spotted with bright rose.

At the Meeting of the Royal Horticultural Society, *Erica jasminiflora rosea incta* (F.C.C.) was shown by Messrs. Rollisson and Son; it is a charming white

variety, pure and good. *Mrs. H. Little* (F.C.C.) and *Magdala* (F.C.C.) are two finely-coloured *Variegated Zonal Pelargoniums*, with yellow leaf-edges. The latter might be termed a greatly improved Lady Cullum. As compared with the two varieties certificated at the Park, these were by far the best. Fancy Pansies, *Mrs. Neilson* (F.C.C.), deep purple, with distinct white margin; *James Neilson* (F.C.C.), deep golden yellow, margined with orange-maroon, and large dark blotches; *Miss M. McCacken* (F.C.C.), pale cream, with large, dark purple blotches; and *Lady Ross* (F.C.C.), bright violet-purple top petals, large black-purple blotches, and margin of pale sulphur; shown by Messrs. Downie, Laird, and Laing, were all finely-coloured, showy flowers. *Cupressus Lawsoniana lutea* (F.C.C.), shown by Messrs. Cripps and Son, was a very attractive golden form, and as the plants had been grown out-of-doors, it must prove a very handsome and acceptable ornamental tree. *Clematis lanuginosa Excelsior*, from the same exhibitors, was a capital double form of *C. lanuginosa*, with the flowers perhaps a little more deeply coloured than usual.—R. D.

CULTURE OF THE OLEANDER.

THE Oleander is, perhaps, the most enduring of greenhouse plants, when we consider its capacity to outlive the most irrational system of culture. How frequently are large plants met with showing very little bloom whilst in reality the Oleander might be grown from cuttings, and bloomed with freedom when a foot or two high, and growing in 48 or 32-sized pots. That they furnish most useful ornamental stuff at that stage of their growth is undeniable, and when more developed they are gorgeous in the extreme.

Nerium Oleander is a native of Southern Europe and Asia. Its natural habitat is the banks of streams, and in such peculiar situations it glows with deep, rosy flowers, and the darkest of green foliage, while all around is parched and dry. We may surmise that the Oleander enjoys a mean temperature approaching nearly to 78° in summer, and 58° in winter, a very happy medium, generally maintained in our warm greenhouses. Old authorities, from whom we are seldom called upon to differ, set down the winter temperature at 35° to 48°, the summer at 60° to 75°. With the latter I do not disagree, but I maintain that to flower them well they should not be subjected to a temperature, to say the least, of less than temperate throughout the whole of the winter months, whilst during the summer the average greenhouse warmth will suffice.

There are besides one or two points in their culture which should never be overlooked. Whilst growing, an abundance of root-moisture, and all the direct light and sunshine possible, should be given them. At this the growing period they delight in surface sprinklings more than is often credited. On the other hand, during winter all the light possible must be afforded, with only just sufficient moisture to maintain a healthy state. At all times the freest possible supply of fresh air must be given to them, without, of course, undue exposure to the baneful effects of cold draughts, which check even the hardiest kinds of

vegetation. There is one question which I should like to ask any traveller who delights in plant culture, and who may have visited the north-western districts of Africa, viz., Draha, or the region of Beled-el-Jereed, the land of dates—where, at the foot of gently inclined plains, the few rivers which abound are strongly impregnated with salt, and have large groves of date palms, the solitary useful plant of the district, planted along their banks. This question is: Does the Oleander grow in the immediate vicinity of any of these salt streams? If so, we may draw the inference that saline particles may not be an objectionable adjunct to its food. Evidently, according to the facts stated, the date palm is capable of receiving aid by the addition of a little salt added to the water which is afforded it, or in admixture with the soil in which it grows. Anyhow, the facts adduced by such old travellers as Jackson, Shaw, and Lieutenant Washington, are worthy of something more than a superficial glance by us who stay at home, and reap the fruits of their arduous labours and researches.—WILLIAM EARLEY, *Valentines*.

KITCHEN GARDENING FOR AUGUST.

THE heavy rains and the close warm weather of the past month have been favourable to the growth of *Vegetables*, and have obviated the necessity of watering transplanted crops. Weeds, too, have grown so rapidly, that it has been rather a difficult matter to keep them down, owing to the wet state of the soil; take full advantage of dry weather to destroy them. Keep the hoe constantly at work between *Savoy*s, *Brussels Sprouts*, *Broccoli*, *Borecole*, and all other advancing crops of *Greens*, and draw some earth to their stems when they are sufficiently advanced. Clear away the early *Cauliflowers*, *Peas*, *Beans*, &c., as soon as they are past, and prepare the ground for winter crops. At the beginning of the month sow a large breadth of *Prickly Spinach* for the main winter supply; also some *Tripoli Onions* for spring use, and *Turnips* of an early sort to bulb soon. Sow some *Lettuces* to stand over the winter; Brown Cos, Brown Dutch, and Hammersmith Hardy Green are hardy sorts. Sow *Cauliflowers* about the 12th, and again about the 22nd—a day sooner or later will make but little difference, but see that the ground is in a fit condition when it is done. Plant out the main crop of *Winter Coleworts* about one foot apart in well-manured ground. Continue to plant out successions of *Lettuces* and *Endive* on dry, warm borders, and to earth up *Celery* as it becomes fit; the heavy rains of last month have been very favourable to its growth. Take up all the early *Potatos* when fit and dry, and store them away; the crop up to the present time is tolerably free from disease here. *Shallots* and *Garlic* should now be taken up, dried, tied up in bunches, and hung up in some dry, airy place. Attend to the *Onion* crop; when the leaves begin to turn yellow the stems should be laid close to the ground, bending the neck about two or three inches from the ground; the thick-necked ones should be carefully twisted before they are bent, otherwise they are apt to snap off; as soon as the thin-necked ones appear fit, they should be drawn and turned root upwards to dry; if left in ground after this, and wet

weather sets in, they will make fresh roots, and will not keep so well. As the principal cropping for this season is over, towards the end of the month every attention should be given to the cleaning of the different crops, and of the garden generally, so that everything may have a tidy appearance.—M. SAUL, *Stourton*.

GARDEN GOSSIP.

THE *Exhibition of the Royal Horticultural Society* at the Aston Lower Grounds, Birmingham, was a grand success. Probably no finer show of plants and other horticultural matters has been seen since the great International Show of 1866. The receipts were over £5,000. There was an exhibitors' dinner, which passed off with a heartiness and unanimity which were most gratifying; and the Congress proved to be fairly satisfactory, though too many papers were brought forward, not allowing time for discussion. Dr. Denny's paper on the *Influence of Parentage in Flowering Plants*, Mr. Paul's on *Form in Tree Scenery*, and Mr. Westland's on the *Future of our Fruit Crops*, were particularly interesting.

— At the recent *Trial of Heating Apparatus* at the Aston Lower Grounds, a gold medal was awarded to Messrs. Hartley and Sugden, of the Atlas Works, Halifax, for their welded wrought-iron chambered saddle-boiler, with extended water-way; and a silver medal to Mr. B. Harlow, of Macclesfield, for the best tubular boiler and connections. Mr. Harlow was also awarded a silver medal for his improvement in joining hot-water pipes.

— A NOBLE example of *Lilium giganteum* is now flowering in the open air at Gordon Castle, Morayshire; it has no less than 17 fully expanded flowers, supported on a stem 11 ft. in height and nearly 9 in. in circumference. Mr. Webster states that the flowering of this plant in the open air is now nothing uncommon, and the circumstance would not be worth citing were it not for taking into consideration the very long period of inclement weather through which it has struggled to grow, and that without the aid of any artificial assistance whatever. Its thorough hardiness, he adds, is now well proven, since he has strong two-year-old plants growing from seed ripened in the open air.

— AMONGST *Bedding Pansies*, Messrs. Dickson and Co., of Edinburgh, have obtained some crosses from *V. cornuta Perfection* which prove to be hardy and free-bloomers, the habit being free and branching, so that they keep up a constant succession of bloom; they come into flower nearly three weeks earlier than *Perfection* itself. The most distinct—and these are handsome flowers—are:—*The Tory*, *White Perfection*, *Advancer*, and *Dickson's King*. *Snowflake*, a seedling from *V. stricta alba*, is a much dwarfer and more compact grower. *Regina* is one of the dwarfiest white Pansies, and a very free bloomer. *Scotia* is distinct in colour, and a very free grower and bloomer. *Eyebright* is very telling, and makes a most attractive bed. *Claret*, a reddish-purple, is a seedling from New Colour, of better substance and colour, and stands the weather better. *Favourite* was raised from *V. amœna magnifica*, and is a capital grower, compact and free, showing its flowers well. *In Memoriam* is one of the finest for bedding, as it has size, colour, substance, and finish; it is a vigorous and compact grower, and a very free bloomer.

— WE have received specimens of a variety of *Lamium album* from Mr. J. Schott Cousins. The leaves are elegantly striped with creamy-white, with a blotching of the same colour here and there superadded, and the variegation is, we believe, constant, though, of course, variable in different leaves. It was found at Amwell Marshes, in Hertfordshire, last year; and will be quite an acquisition amongst hardy variegated perennials.

— ELSEWHERE we have given figures and descriptions of several *New Peas* raised by Mr. Laxton. We have also the promise of a new batch from Mr. Standish,

who in 1869 commenced hybridizing Peas, with the view of obtaining dwarf early marrowfat varieties, combining the quality of our richly-flavoured marrowfats with the precocity of our earliest round sorts. With this object in view, he took Ne Plus Ultra, one of our best but latest marrow Peas, as the female parent, and hybridized it with Laxton's Supreme, an unquestionably fine second-early pea, but wanting in flavour. In 1870 the selection from the previous year was further crossed with Climax, an early dwarf marrowfat, but possessing the disadvantage of not filling the pods well, yet having the rich flavour of the marrowfats. A selection was again made, and in 1871 these were crossed with Laxton's Alpha and Maclean's Little Gem, and the race of seedling Peas growing this year at Ascot show that earliness, combined with flavour, has been obtained. There are, amongst those selected last year, and now on trial, some dwarf kinds of great promise, one in particular, which appears to be a very fine dwarf early marrowfat, not exceeding 2 ft. in height, a good cropper, with large, handsome, well-filled pods, and a decided Marrow Pea. Such a Pea is a desideratum.

— At Regent's Park, where *Messrs. John Waterer and Sons' Rhododendron Exhibition* has been held annually for the last 23 years, the gem of the season amongst the newer varieties was *Marchioness of Salisbury*, a delicate rose, with brighter edges, handsomely spotted with cinnamon-red, forming a fine compact truss of large pips backed up with good foliage. *Frederick Waterer* was also a striking new sort, the flowers being of a bright crimson shade, with rather long stamens; the truss very neat and compact. *John Walter* was smaller than the last-named, of the same shade of colour, but very pretty.

— MR. GRIEVE, of Culford, has sent us examples of a *Bronze Ivy-leaved Pelargonium*, an entirely new strain, of singular beauty, which we regard as a great acquisition. It was obtained by fertilizing an Ivy-leaved variety by pollen of a Bronze Zonal, and the result is a well-marked gold and bronze Ivy-leaved variety, of robust and compact habit, which promises to be equally useful as a bedding and as a pot and vase plant. The flowers are crimson; and the leaf of a rich golden tint, with a bronze zone, the older leaves becoming tinted with red at the margin.

— IN order to see the *Poinsettia pulcherrima* in its full beauty, observes a correspondent of the *Gardeners' Chronicle*, it should be planted out and trained to the brick wall or trellis, in a stove. There is a plant thus grown at Moreton Hall which covers a space of nearly 40 square yards. As it begins to grow, the young wood, which can be easily led in any direction, is so trained, that when the blooming season arrives the inflorescence is evenly displayed over the whole surface. It begins to bloom about December, and was on March 1 last still showy with flower-heads like so many crimson stars. A few weeks later, the plant is cut back to within an eye or two of the old wood, and allowed to come away at its own proper time. There is a plant of *Allamanda cathartica* grown in conjunction with the *Poinsettia*, and as the latter, after being cut down, looks for a season rather naked, a few sprays of the *Allamanda* trained here and there amongst its branches help to hide its nakedness. There is also another plant trained to the same wall, but kept to itself, and that is *Cereus grandiflorus*. This plant has been a companion to the *Poinsettia* for nearly 30 years; it grows vigorously, and has had as many as 18 blooms expanded at one time. These three plants derive their root-nourishment from a narrow border of what may be termed friable loamy soil, which runs along the bottom of the wall; this border is encased with stone, and is 18 inches broad, by the same in depth. There is no bottom-heat, but the border is kept dryish on that account, and the plants are stated to thrive under such treatment exceedingly well.

Obituary.

— MR. GEORGE WYNESS, for many years gardener to Her Majesty at Buckingham Palace, died recently, at an advanced age. He was well known as a cultivator and raiser of florist's flowers, especially of Dahlias and Verbenas. His unassuming, quiet demeanour gained for him the esteem of a wide circle of friends.

— MR. JOSEPH SALTMARSH, the senior partner in the firm of Saltmarsh and Son, Moulsham Nurseries, Chelmsford, died on June 14.



GALLOWAY PIPPIN APPLE.

WITH AN ILLUSTRATION.

THIS fine culinary Apple was exhibited last season before the Fruit Committee of the Royal Horticultural Society, and was awarded a First-class Certificate by that body. It is regarded as an excellent late variety, succeeding well in the North. That it is a full-sized and good-looking fruit, Mr. Macfarlane's portrait of it, which we now publish, is good evidence. We are indebted for the examples figured (several specimens, remarkably uniform in character, having been sent to us), to Messrs. Backhouse and Son, of York, by whom it is to be distributed. It appears to be also known under the name of Croft-en-Reich, having been grown from time immemorial in an orchard called Croft Angry, adjoining the town of Wigtown. Hitherto its fame has been local.

The fruit, it will be seen, is above the middle size, roundish, somewhat flattened, and having a slight tendency to angularity around the eye. The skin is a greenish-yellow, taking on a pale red glow on the exposed side, strewed with russet dots, and having here and there traces of russet. The stalk is short and stout, seated in a deep cavity, and the eye is medium-sized and partially closed. The flesh is firm, but tender, and of a yellowish colour, with a greenish tinge, juicy, with a pleasant brisk acidity. It is in use till the end of January, and may be had even much later.

Few Apples pass the ordeal to which they are submitted by the Royal Horticultural Society's Committee, so that it may reasonably be concluded that the present variety possesses very considerable merit.—T. M.

LARGE-FLOWERED PELARGONIUMS OF THE YEAR.

PROBABLY never before in the history of the Show Pelargonium has such a number of new varieties received First-class Certificates as during the present Summer, or have such unquestionably grand flowers been produced.

At various times these new varieties were shown by Mr. Turner, but the culminating point was at the Great Show of the Royal Horticultural Society on the 5th of June, when a large group of them was staged almost in the centre of the principal tent, and attracted, as they deserved, a great amount of attention. There were many fine features in that Exhibition, but a prime one was this group of Pelargoniums; the massive flowers were finely developed, and the colours were rich, bright, and pleasing.

As many as eighteen varieties obtained First-class Certificates at the meetings of the large Societies held during the year; of these seventeen were raised by Mr. Foster, and one by Mr. Hoyle. Alphabetically arranged, Mr. Foster's flowers run as follows:—*Brilliant*, bright, orange-carmine lower petals, with a small dark blotch on each, dense glossy black upper petals, very bright in colour; showy and distinct. *Chancellor*, dark top petals margined with rose, lower petals violet-rose, with dark blotch rayed with vermilion; a finely formed free-blooming variety.

Conquest, clear carmine lower petals, orange-crimson upper petals, with dark blotch, and tinted purple margin, good strong bright colour, fine form, and free-blooming. *Countess*, soft salmon-pink lower petals, with small blotch ; large dark blotch in top petals, with fiery orange margin, and wire edge of rose ; distinct and good. *Druid*, pale violet-pink, lower petals slightly stained with dark, and top petals with margin of lively maroon-crimson breaking into the blotch, and wire edge of pink ; a fine and distinct variety. *Duchess*, a fine painted flower, having orange-carmine lower petals stained with dark, and rich dark top petals, with wire edge of lively rose, very fine and striking. *Great Mogul*, rosy pink lower petals, medium-sized dark maroon spot on top petals, large clear white throat ; of great size, and of fine form. *Highland Lassie*, soft bright orange carmine lower petals, dark blotch on top petals, with a broad orange-crimson margin, white throat, fine form and substance. *Naomi*, purple-magenta lower petals, blotched and veined with dark ; dark top petals, with wire edge of rosy-crimson ; distinct and novel. *Prince Arthur*, carmine-pink lower petals, with veins of deep orange, glossy dark top petals margined with bright vermilion, and wire edge of pink ; very large rounded pip and bold truss. *Prince of Wales*, deep pink lower petals, dark top petals, very large pip, of the finest form and substance. *Purple Gem*, bright rosy purple lower petals, much stained and shaded with dark ; glossy dark top petals, with wire edge of rose, large white throat, stained with purple ; free and very striking. *Ruth*, rich rosy carmine, lower petals tinted with purple, white throat ; very dark blotch on top petals, and broad margin of violet-rose ; a fine flower. *Robin Hood*, violet-pink lower petals, with slight maroon veins and spots of the same, dark top petals lit up with maroon, and wire edge of pale rose. *Syren*, pink lower petals, tinted with orange and pencilled with dark ; dark top petals, with wire edge of pink ; a soft and pleasing flower. *Senator*, a heavily painted flower, veined also with crimson, and bearing a maroon blotch on top petals, edged with rosy pink. *Scottish Chieftain*, fiery orange lower petals, stained with dark, rich dark top petals, with narrow edge of lively crimson ; distinct and very fine. *Charles Dickens* (Hoyle) is a flower having vermilion lower petals, pink towards the edge and veined with dark, and blotched with the same ; dark top petals, with thin edge of deep bright rose. *Blue Bell* (Foster) was singularly enough awarded a Second-class Certificate by the Floral Committee, although it had received a First-class in 1871. It has pale lilac-blue lower petals, with rosy purple lines ; dark top petals, with pure edge of pink, the under-petals somewhat pointed, yet it is a variety that will be very acceptable on account of its novel colour.

A First-class Certificate was awarded to *Captain Raikes* (Weatherill), a reddish crimson-coloured variety, shaded with maroon ; a wonderfully free-blooming forcing variety, but which emits a somewhat disagreeable perfume.

In addition to the foregoing, about a dozen other varieties were staged by Mr. Turner, which, though of good properties, were distanced by the fine varieties

enumerated above. They serve to indicate that the improvement in “Florists’ Flowers,” so called, is still carried on most successfully, and though there has been of necessity some departure from the rigid rules which governed estimates of these flowers fifteen or twenty years ago, still they are being widely applied in the main, and with most beneficial results.—Quo.

FLOWER-GARDEN MANAGEMENT.—SEPTEMBER.

THE immense fall of rain that we have had has been unfavourable to flower-gardens, as it has spoiled the flowers, and thrown the plants into exuberant growth. *Variegated Pelargoniums* are very fine, particularly the Silver-Margined and Tricolor sorts; these are very beautiful, and should be used largely on grass in all gardens. The greatest attention will now be required to keep everything in the best possible order, so as to keep up the beauty and appearance of the garden as long as possible. Attend to the trimming and tying of climbers, and secure well to stakes all tall-growing plants, as *Hollyhocks*, *Dahlias*, &c., to prevent them from being injured by the winds. Pick off daily all faded flowers and dead leaves, and trim and regulate all rambling shoots. The grass, walks, and edgings will require almost constant attention to keep them in order. Continue to put in cuttings of all kinds of *Bedding Plants*; the sooner all kinds of *Pelargoniums* are in the better. *Verbenas* and many other plants may be put in later. Rooted cuttings of *Phloxes* and other herbaceous plants should now be planted out, also seedling *Hollyhocks*, *Pansies*, *Polyanthuses*, *Wall-flowers*, &c., if not already done. Sow *Hardy Annuals* for spring-flowering at the beginning of the month.

IN-DOORS.—Get the houses thoroughly cleaned and repaired, if wanted, before housing the plants, and see the heating apparatus is in good working order. Attend to all matters tending to the maturation of the young growth, as it is a great point in the management of greenhouse plants to have well-ripened wood at this season. The hardier kinds may remain out of doors, if the weather continue fine, until the middle or close of the month, but the more tender plants should be housed before then; the pots should be well cleaned, and the plants neatly tied, before they are taken into the houses. When the plants are all housed, they can scarcely have too much air day and night in mild weather. The plants, especially those in small pots, when staged and exposed to a thorough circulation of air, will dry rapidly; watering should, therefore, be carefully attended to. The *Pelargoniums* that were shaken out and put into small pots last month will now be making fresh roots freely, and should have a shift before the roots get too matted; use a compost of turfy loam, rotten dung, and a little sand; those cut back last month will now be breaking, and should have all the soil shaken from them, and be put into small pots and treated as the early ones. Attend well to the watering of *Fuchsias*, *Salvias*, *Pelargoniums*, &c., in flower, and those intended for autumn blooming; and continue to shift seedling *Cinerarias*, *Calceolarias*, *Chinese Primroses*, &c., as they require it. Pot bulbs of *Hyacinths*,

Narcissi, Jonquils, Tulips, &c., in turfy loam, sandy peat, and a little rotten dung, for early forcing.—M. SAUL, *Stourton*.

CAPRICES OF THE FRUIT CROP.

HOW else shall we designate exceptionally heavy crops of Apples with a general failure, not only in the same district, but often in the same garden? Were the exception confined to the same varieties, it might be accounted for by some peculiarities in the time of flowering, hardiness or otherwise of the trees, &c. For instance, the Court-pendu-plat apple is, as a rule, quite three weeks behind many other apples in flowering; consequently, if it escaped where others failed, there would be no marvel about it. But here are four or five New Hawthornden apples on the same borders—two laden with fruit and the others bare. Again, here are two Irish, or Manks' Codlin, one on either side of a narrow walk—one is as full of fruit as possible, the other has three apples on it. Again, for miles as you drive along, every orchard is bare or barren; but presently you come upon an orchard literally groaning beneath its heavy load of fruit. I passed one such the other day, and could but marvel at the caprices of the fruit crop. I wish the readers of the POMOLOGIST would resolve themselves into a jury to collect evidence and endeavour to pronounce a verdict on this interesting matter. Doubtless there are causes for the effects we see, either in the heavens above, or in the earth beneath, or in the interference of man. Could we only discover and comprehend them, it seems likely we might become less the sport and more the master of climatical conditions than we, unfortunately, are at present.—D. T. FISH, *Hardwicke*.

LISIANTHUS PRINCEPS.

SOME twenty years ago or more this fine plant was first described in the *Journal of the Royal Horticultural Society* (iv., 261). Subsequently, a coloured figure appeared in the *Flore des Serres* (t. 557), and the woodcut illustration we now reproduce, and for which we have to thank the proprietors of the *Journal of Horticulture*, was published by us in the *Gardeners' Magazine of Botany* (ii., 77). It is described as a tufted shrubby plant of great beauty, with numerous smooth dichotomous branches, bearing shortly-stalked opposite ovate-lanceolate acute deep green leaves, and having at the apices of the branchlets subumbellate clusters of several large drooping showy flowers, exceedingly unlike those of the ordinary *Lisianthus*. "The cup of the flower is half-an-inch deep; the corolla is five inches long, and rather more than an inch wide in the thickest part," with a limb of five short ovate acute segments. These segments are green, with the yellow at the top of the tube extending upwards and forming a yellow star, as indicated by the light parts in the engraving; the tube for about an inch at either end is also yellow, the intermediate longer portion of the tube being of a crimson-red. The accompanying figure is, of course, considerably reduced.



LISIANTHUS PRINCEPS.

This Lisianth is a native of New Grenada, whence it was originally introduced by Mr. Linden. It seems, however, to have been lost sight of, till now that fresh seeds have been obtained. In its native home it grows at a considerable elevation, and therefore it will doubtless require the temperature afforded by an intermediate house. The late Dr. Lindley estimated it as one of the noblest plants in existence.—T. M.

PRIMULA JAPONICA.

THIS being the first season of blooming this charming new Japanese Primrose since its distribution, it has been looked upon with much interest. No doubt it will become a universal favourite, since it is exceedingly beautiful, and a great acquisition to its class. It is very vigorous in growth, and I believe perfectly hardy; but like many other hardy plants, will bloom much finer with a little protection. The plant is quite deciduous, losing its foliage as soon as it becomes frosted. I have not yet experienced the result of planting it in the open ground, but as a pot-plant it is remarkably showy when well managed. Some very fine plants exhibited by Mr. Turner, of Slough, grew to the height of about thirty inches, producing from five to seven tiers of flowers on each stem, the lower tiers having from 12 to 15 flowers in each tier, the individual blossoms much resembling those of a fine bright magenta-coloured Phlox. These plants have produced a large quantity of fine, well-ripened seed. I would recommend the seed to be sown immediately it ripens, so that it may germinate the following spring, for it naturally takes a long time to germinate.*

The plants will now have thoroughly recovered themselves after blooming, and will have made some fine offsets. These should therefore be divided, for the plants propagate very freely in this way; the crowns or offsets should be separated by cutting exactly through the centre of the blooming stem each time, thus generally making at least three or four fine plants; these should then be potted into 48 or 5-inch pots, using a mixture of soil consisting of two parts good fibrous loam, one part good rotten dung, and one part peat, with the addition of some silver-sand. The plants should then be placed in some shady situation until they become sufficiently established to bear exposure; they should then, during the autumn, be placed in a southern aspect, with plenty of room, shading them when the sun is very bright; this will prevent the foliage from getting flaccid, and will keep the plants in a growing state. They must be kept well watered, as they are particularly fond of moisture. As the leaves decay they should be cut off. The plants are to be kept in a cold frame during the winter, and if a slight covering can be used in frosty weather so much the better. Early in February they will begin to grow, and should then be repotted into 32 (6-in.), or 24 (7-in.) pots, according to their size. It is a plant that makes abundance of roots, so that plenty of pot-room is necessary. During the month of March the plants

* We understand that new seed, sown as soon as ripe, yields at least a fair proportion of young plants at once.

will make great progress, and must be allowed as much air as possible, with a little weak manure-water about twice a week, slightly shading them if the sun is very bright. As the blooming stems grow, support them in an upright position, and when the flowers begin to open, they should be put in a shady situation, until they have done blooming; after this they should be placed in the open air, to ripen their seed.—JOHN BALL, *Slough*.

GARDEN LITERATURE.

WE have before us the tenth edition of Rivers' ROSE-AMATEUR'S GUIDE,* one of the oldest and still one of the best of the many books about Roses. A book so well known, and so thoroughly appreciated, needs no recommendation; nevertheless, we may commend its plain and homely style as likely to be acceptable to amateur readers. Mr. Rivers speaks up, as well he may, in behalf of the old Provence or Cabbage Rose, and its mossy varieties, as being amongst the choicest of all Roses, and universal favourites, though rather elbowed out by the moderns. Writing of the crimson group of Hybrid Perpetuals, and after mentioning such as Sénateur Vaisse, Gloire de Santenay, Charles Lefebvre, François Lacharme, Alphonse Damaizin, Duc de Rohan, Maurice Bernardin, Professor Koch, Madame Julie Daran, Olivier Delhomme, Alfred Colomb, Le Rhône, Lord Macaulay, Antoine Ducher, Baronne Adolphe de Rothschild, Comtesse d'Oxford, Dr. Andry, Duke of Edinburgh, Fisher Holmes, Louis Van Houtte, Mdle. Annie Wood, Marie Baumann, Vainqueur de Goliath, and Lord Clyde, as forming a perfect galaxy of Rose beauty, the author observes, "I cannot see the possibility of surpassing the above by new varieties, and yet they come, or pretend to come, every year from France." "This incessant introduction of novelties without novelty is, I fear, bringing rose-cultivation to charlatanism, which can only be stemmed by the English growers being well assured of the qualities of a new Rose before they recommend it."

An elegant volume on one of the most popular of modern flowers, the *Clematis*, has just appeared, under the title of THE CLEMATIS AS A GARDEN FLOWER.† The object of this book is to meet the increasing taste for the *Clematis*, by placing all possible information respecting their treatment, and the peculiarities of the varieties, old and new, within easy reach of those who may desire to avail themselves of it. After noticing the various introductions, the authors give an interesting chapter on the modern improvements in the *Clematis*; other portions are devoted to classifications and selections, and then in a series of chapters the general culture of the several groups is explained, as well as the special culture of the plants for various objects, as conservatory decoration,

* *The Rose-Amateur's Guide*: containing ample descriptions of all the fine leading varieties of Roses, their history and mode of culture. By Thomas Rivers. Tenth Edition, enlarged, corrected, and improved. London: Longmans. 1872.

† *The Clematis as a Garden Flower*: being descriptions of the Hardy Species and Varieties of Clematis or Virgin's Bower, with select and classified lists, directions for cultivation, and suggestions as to the purposes for which they are adapted in Modern Gardening. By Thomas Moore, F.L.S., and George Jackman, F.R.H.S. London: John Murray. 1872.



CLEMATIS SIEBOLDII.

bedding-out, exhibition, walls, pillars, rockeries, &c. Finally, descriptions are given of 176 varieties and species, ancient and modern, with two coloured illustrations representing four varieties, and 15 other plates representing certain types, or the several modes of culture for which the Jackmanni group is adapted. We give, as an example of the illustrations, *Clematis Sieboldii*, a fine old sort now half forgotten, with the chapter devoted to the general culture of the *C. montana* and *C. patens* types, to which latter *C. Sieboldii* belongs:—

“These sections include the earliest or spring-flowering division of the family. The majority of the species and varieties of which they consist come into blossom naturally about May; but some few of them, *e.g.*, *C. calycina* and its allies, are much earlier than this, and blossom from the commencement of the year onwards. These latter are best suited for planting against walls, in warm sheltered situations, where their opening flowers may be in some degree protected against inclement weather. The varieties belonging to *C. patens* and *C. florida* [represented by *C. Sieboldii*, one of the same type], are perfectly adapted for planting against conservative walls or in corridors, and some of them make elegant early-blooming beds, especially in positions where their blossoms are thoroughly sheltered, either naturally or artificially, from severe spring frosts, which occasionally, though rarely, may somewhat injure them.

“*C. montana*, which is also a spring or May-bloomer, is a plant of vigorous growth, and perfectly hardy, and is specially adapted for covering walls, or trellises, or arbours, or in fact for planting in any position where rapidity of growth is desired. The same may be said of the species of the graveolens type, hereafter to be noticed, and which mostly flower later in the year.

“None of these plants, especially those of the *montana* type, are very particular as to soil, but will grow in any good garden earth which is fairly enriched, efficiently drained, and maintained in a healthy state as regards its mechanical composition—that is, kept open so that water may freely percolate, and the air readily permeate it. Where it can be provided, a rich soil of a light loamy texture is the best for all these plants, and if this be mixed, either naturally or artificially, with chalk or lime, so much the better for the *Clematisses*. Thorough drainage is indispensable to good healthy development; and the vigour of the plants must be kept up by at least annual manurings with horse or cow manure, or that happy fertilizing mixture known as ‘farmyard muck,’ these being alike salutary applications. On dry hot soils, cow-manure would probably be preferable; while on heavy soils a thorough dressing of good leaf-mould would be beneficial.

“Mulleching, which consists in covering the surface of the soil for some little distance round about the plants with half-rotten dung, is another mode of manuring, from which the plants derive no inconsiderable amount of benefit. This operation should be performed annually on the approach of winter, and is more necessary after the plants have become established, as the manure applied at the time of planting will then be more or less exhausted. The mulleching acts, moreover, as a protection to the roots in the case of severe weather, and though not necessary on this score—the plants being thoroughly hardy—is certainly not injurious. The effect of mulleching would be to increase the strength of the plant, and at the same time the size of the flowers.

“When growth commences in the spring-time, the young shoots must be attended to, and trained around or against the supports provided for them, whatever these may be. The weaker shoots may, if necessary to prevent entanglement, be cut away during the summer; but all the vigorous shoots for which there is space should be trained in, since it is these, when thoroughly developed and matured, which furnish the flowers for the ensuing year.

“The strong-growing sorts of the *montana* type are good verandah plants, and suited for rapidly covering any bare spaces which require clothing; but the less robust plants of the *florida* and *patens* types are better suited for training on conservative walls or for furnishing corridors, or any similar positions where their elegant and showy blossoms may be brought more closely into view.

“Pruning is one of the important points of good management, and on its due performance rest mainly the chances of having a fine display of flowers. Only the weaker, or straggling, or overcrowded branches should be cut away. The strong one-year-old wood should be trained in, as far as it has become thoroughly ripened, beyond which it may be cut away; and this should be so disposed as to fill up all vacant spaces. The pruning should take place in the month of February or March, after the severe frosts of winter have passed away.”

T. M.

NOVELTIES, ETC., AT FLOWER SHOWS.

IT seemed to be an unfortunate arrangement which necessitated two large Exhibitions on one day—June 19—the one at South Kensington, the other in the Regent's Park. Novelties were thus divided, and at neither place were they largely produced. In addition to those noted at p. 188, the following may be mentioned :—*Phaius Bensonæ*, var. *Marshalliæ* (F.C.C.) is a white variety of *P. Bensonæ*, in the possession of Mr. William Marshall, Enfield, a charming white Orchid, that has much increased in value since it was first seen in 1871. *Pteris (serrulata) Applebyana* (F.C.C.) is a dwarf, narrow, drooping, crested form of *serrulata*, somewhat distinct in character, elegant in growth, and promising to be useful. It came from Mr. B. S. Williams. *Erica jasminiflora roseo-tincta* (F.C.C.) is one of the gumless *Ericas* in the possession of Messrs. Rollisson and Sons; the absence of this sticky secretion is thought well of by growers, inasmuch as the flowers can be kept cleaner in consequence; it is a charming variety, of good habit, and free of bloom. Four new Fancy Pansies, viz., *James Neilson* (F.C.C.), *Mrs. Neilson* (F.C.C.), *Lady Ross* (F.C.C.), and *Miss McKen* (F.C.C.), from Messrs. Downie Laird and Laing, were all distinguished by size, substance, and delicate and rich tints of colour. At the Regent's Park the most striking new plant was *Bertolonia superbissima* (F.C.C.), from Mr. William Bull, as already noted. *Dieffenbachia nobilis* (F.C.C.), *Draccena princeps* (F.C.C.), and *D. formosa* (F.C.C.), from the same exhibitor, are also handsome and valuable additions. *Begonia rubra superba* (F.C.C.) is a fine hybrid raised from *B. bolivensis*, bearing handsome crimson flowers, and was shown by Messrs. E. G. Henderson and Son; as also was *Verbena Harry George Henderson* (F.C.C.), a promising shaded cherry-coloured variety, with a bold pip and fine truss.

It was at the Great Provincial Show of the Royal Horticultural Society at Birmingham, on Tuesday, June 25, and following days, that the best batch of novelties put in an appearance. Foremost was *Tacsonia devoniensis* (F.C.C.), from Mr. R. T. Veitch, Exeter, raised from a cross between *T. Van Volxemi* and *T. mollissima*, with the habit of the former, but the flowers of a rosy magenta hue. It is a rare acquisition. *Cypripedium Irapeanum* (F.C.C.), a new herbaceous species from Mexico, with large golden-yellow flowers, shown by Messrs. Backhouse and Son, York, was an object of considerable attention. *Erica Denisoniana* (F.C.C.), and *E. effusa* (F.C.C.), the former having white and rose flowers, the latter of a pale-red hue, promise to become favourites with growers of these superb plants; they were shown by Messrs. Rollisson and Sons. *Anæctochilus Ortgiesii* (F.C.C.), shown by Messrs. Carter and Co., is a distinct and handsomely marked species. *Iris tingitana* (F.C.C.) is a rich dark violet-purple species, with a flame of pale orange on the lip; and *Saxifraga florulenta* (F.C.C.), a dwarf-growing type, with a handsome appearance; the two latter came from Mr. George Maw, Broseley. *Tea Rose Cheshunt Hybrid* (F.C.C.) represents a tea-scented variety of an unusual depth of colour and of full substance, and is a chance seedling raised

at the Cheshunt nurseries by Messrs. Paul and Son. *Abies Douglasii Stairii* (F.C.C.) was shown by Mr. A. Fowler, Castle Kennedy; the young growth of this variety is of a creamy colour, but changes to green during the winter; it is thoroughly hardy and very effective. Several certificates were given to E. J. Lowe, Esq., and J. E. Mapplebeck, Esq., for hardy Ferns; among those exhibited by the former were some splendid *Adiantums*, that almost rivalled in beauty the most valuable of the exotic species and varieties; and to G. F. Wilson, Esq., F.R.S., awards were made for some beautiful Lilies.

The next Exhibition was that of the Royal Horticultural Society, on the 3rd of July. *Lilium Humboldtii* (F.C.C.), deep orange with brown spots, and *L. Martagon dalmaticum* (F.C.C.), dark claret-purple, from G. F. Wilson, Esq., were both fine forms of this popular flower. *Verbena Lady of Lorne* (F.C.C.) is a finely formed variety, the flowers white tinted with lilac, and was shown by Mr. Stacey, Dunmow. *Pelargonium Argus* (F.C.C.) is an attractive rosy-cerise, hybrid, Ivy-leaved variety, and came from Mr. G. Smith, Hornsey Road, Islington. Pyramidal Stocks *Mauve Beauty* (F.C.C.) was finely shown on this occasion by Mr. R. Dean, Ealing; it is of a most delicate tint of mauve, and forms large close pyramids of flower. *Tricolor Pelargoniums Empress* (F.C.C.), and *Gem of Tricolors* (F.C.C.), came from Mr. C. Kimberley, Coventry, both robust-looking golden-edged varieties. The fine old *Campanula Medium calycanthema* was shown by Messrs. Waite Burnell and Co., both in the blue and white forms—grand old border flowers of great beauty, and well worthy extensive culture. *Bouvardia Vreelandii*, sent by Messrs. Standish and Co., is a pure white variety, very free, and of great value as a decorative plant.

At the Exhibition of the Royal Botanic Society on July 10, *Erica splendens coronata* (F.C.C.), and *E. opulenta* (F.C.C.), were shown by Messrs. Rollisson and Sons, and like others previously exhibited are valuable additions to this glorious class of plants. *Dipladenia amœna* (F.C.C.) was shown by Mr. B. S. Williams in fine condition, and the same can be said of *Lasiandra macrantha floribunda* (F.C.C.), from Messrs Veitch and Sons. *Lythrum floccosum* (F.C.C.) is a charming rose-coloured species, from Mr. T. S. Ware, who also had a species of *Artemisia* (F.C.C.), with silvery foliage, that appears likely to make a useful bedding plant. First-class Certificates were awarded to *Picotees Princess of Wales* and *Mrs. Allcroft*, from Mr. C. Turner, and to *Miss Norman* and *Charles Williams*, from Mr. N. Norman; also to *Carnation Prince Arthur*, from Mr. Turner; all fine and well-marked flowers. *Rose S. R. Hole* (F.C.C.) is a Hybrid Perpetual, raised at the Cheshunt Nurseries, and is of a dark shaded-crimson hue.

The meeting of the Royal Horticultural Society on July 17 brought together several novelties of much interest. First-class Certificates were awarded to Mr. Turner for *Nosegay Pelargonium Mrs. Quilter*, with large trusses of soft pink flowers; for *Carnations Superb*, a finely marked scarlet flake; *J. W. Ingram*, scarlet flake; *Isaac Wilkinson* and *Comparison*, both very fine crimson bizarres; to *Mrs. Frederick Ponsonby*, a very delicate rose flake variety; and to *Picotees B. J.*

Bryant, *Mrs. Hornby*, and *Norfolk Beauty*, purple edge ; and to rose edge *Ethel* and *Edith Dombrain*. These were all of fine substance, pure, and handsomely marked. *Pink Pearl* (F.C.C.) is a *Nosegay Pelargonium* that has nothing but colour to recommend it, and it did not seem to be worthy the award made to it. *Lilium japonicum Takesima* (F.C.C.), white, with sulphur-green throat ; *L. tigrinum splendens* (F.C.C.), a superb form of the Tiger Lily ; and *L. Leitchlinii major* (F.C.C.), were all very interesting examples, shown by G. F. Wilson, Esq., *L. longiflorum* was also very finely shown.

The Exhibition of the Royal Horticultural Society, on August 7, had one leading feature of more than ordinary interest—a most meritorious collection of Herbaceous *Phloxes* in pots, to the number of nearly 80 plants, exhibited by Messrs. Downie Laird and Laing. The plants were well grown, and very finely flowered, the quality of the blossoms being as fine as could be seen on plants growing in the open ground. The following new varieties were very promising :—*Ada Louisa*, pure white, with distinct rosy purple eye, a very pretty hue of colour ; *Countess of Eglinton*, clear deep lilac-rose, dashed with violet ; *H. M. Simons*, pale bright rose, tinted with violet ; *Lilacina*, pale lilac, with white blotches, a very pretty and novel variety ; *J. K. Lord*, rosy-carmine, with shaded crimson round the eye ; and *Purple Prince*, bright rosy purple, with dark centre, very distinct, and good shape. All the foregoing were of Messrs. Downie Laird and Laing's own raising, and, in fact, these well-known florists appear to be quite abreast of the Continental raisers in the production of fine new varieties of the Herbaceous Phlox. *Lothair*, light salmon-scarlet, and *A. F. Barron*, pale bright lilac, with large crimson eye, two varieties sent out by this firm last year, were also very fine. *Hollyhock Eleanor* (F.C.C.), one of Lord Hawke's Seedlings, is a fine, full flower, of great beauty, and of a clear rosy pink hue. *Medora*, shown at the same time, very closely resembled it. Stands of fine flowers were shown by Mr. William Chater, Saffron Walden. *Verbena Mrs. Levington* (F.C.C.), shown by Mr. Eckford, of Coleshill, has a pale pinkish rose centre, with deep carmine rose edging, very fine pip and truss. A fine example of *Lilium lancifolium splendidum*, about six feet in height, and having large heads of flowers, was shown by G. F. Wilson, Esq. Mr. Wilson considers it a distinct strong-growing type of this favourite Japan Lily.—R. D.

ON CONIFERÆ AS ORNAMENTAL PLANTS.

AMONGST the many forms of Coniferous plants which may be calculated upon for the production of certain effects, either on the borders of shrubberies, or as single specimens, may be set down the Irish Yew (*Taxus baccata fastigiata*), the Irish Juniper (*Juniperus hibernica*), and the Italian Cypress (*Cupressus sempervirens*). The latter, however, most unfortunately, cannot always be depended upon for being thoroughly hardy, yet is too beautiful and effective in certain positions to be discarded, if there is any probability of its being induced to flourish.

I am not aware of any plants better adapted for the production of striking effects than the above three, either when planted in combination with round-headed or weeping trees, or as single specimens on grass, their spire-like form rendering them highly effective by way of contrast. In order to maintain this



CRYPTOMERIA JAPONICA.

spiry character, it is necessary from time to time to remove any side leaders which they may throw out, and confine them to one. The Irish Yew especially requires severe treatment in this way, but it amply repays for the trouble, as it then maintains the single spire-like character which is so desirable, and is,

indeed, the chief reason why it is so valuable. Indeed, when several leaders are allowed to grow up, it becomes a broad and somewhat misshapen tree, not particularly desirable in a single specimen, and of no great advantage when used in combination, unless by way of contrasting its dense and dark foliage with trees of a lighter hue; besides which, it is in this condition very liable to have its slender branches bent down to the ground with snow, giving it a loose and by no means elegant character, from which it is long in recovering.

The Irish Juniper does not attain any great diameter, and is a very suitable and striking plant when placed along the margins of shrubbery borders, particularly where there are serpentine walks through them. If planted in small groups of five or six, principally on the projecting sides and at intervals, they will, when seen from a distance, form peculiarly effective and striking objects, their glaucous appearance and spire-like form contrasting well with the other occupants of the borders.

The Italian Cypress differs from the other two species principally in the colour of the foliage. The habit of growth is compact, and the appearance elegant in the extreme when viewed from a distance, either standing in groups or in the neighbourhood of architectural embellishments; indeed, all the three species associate well with the severer style of geometric gardens, besides contributing their share to enhance the beauties of the natural style.

In connection with large masses of rockwork they look exceedingly well, where there are sheltered recesses, as they create a pleasing contrast and variety of hue, without taking up too much space. The spiry form so desirable in such situations has often led to the planting of Conifers of a more spreading habit of growth, but I have generally found that they must be removed after a few years, unless indeed the rocks are very large, and, as is the case at Redleaf, are viewed from a long distance. Then Conifers in general, and Cedars of Lebanon in particular, look very well in juxtaposition with the large rocks, and may be allowed to attain considerable dimensions.

The *Sciadopitys verticillata* seems likely to form a valuable addition to the class of ornamental Conifers. It is perfectly hardy, and being of slow growth, is very well adapted for planting among smaller masses of rockwork. The habit is peculiar, and I should imagine a large tree in perfect health to be a very beautiful object. Doubts have at times been expressed about its thorough hardiness, but I have no doubt on this point, as our plant has stood unprotected for the last six winters, and is quite healthy.

The several varieties of *Cryptomeria* are valuable as ornamental Conifers. Lobb's variety is picturesque, but by no means symmetrical; it, however, appears to be hardier than the old *C. japonica*.* I have lately met with one called Cripps' variety, which seems likely to throw all the rest of that class into the shade; the foliage is dense and compact, the habit of growth symmetrical, the colour like

* The accompanying figure of this plant is from Alphonse de Paris's *Les Promenades de Paris*.

Lobbii, a beautiful lively green, instead of the dull sombre hue of *C. japonica*; it is a rapid grower, and thoroughly hardy, having remained uninjured where *C. japonica* by its side was much cut. *Cryptomeria elegans* has altogether a different type of foliage and colour to any of the above, and bids fair to become a very valuable plant for producing variety and effect, whether in mixed borders or as single specimens; not the least valuable of its properties is the rich brown and purple tint which the foliage assumes in the autumn.—JOHN COX, *Redleaf*.

ZONAL PELARGONIUMS:—IANTHE AND WELLINGTON.

THE present season has been unfavourable to this section of bedding plants. In some classes of soils, with so much rain, many of the varieties have grown quite out of character; and those sorts which did open out in a blaze of colour had the petals scattered with the recurring thunder-showers. There can be no doubt that the different sections of the Zonal Pelargoniums furnish the most useful subjects for the flower-garden; for, not to mention the flowering section, there is rich and ample material in the leaf-colouring; and white, tricolor, gold, and bronze can be worked up in many combinations.

In the Flowering section one would almost have thought there was no room for further improvements. However, in Ianthe and Wellington we have in one season two decided acquisitions. I bought Dr. Denny's set from Mr. W. Paul last year, and fixed upon the above as being useful bedding varieties; they were propagated freely from a small plant of each last year in June, and I had about 100 of Wellington and over 130 of Ianthe at bedding-out time. I planted two round beds of Ianthe and an oval with Wellington. Of the two, I think Ianthe will be the most useful for bedding purposes, as either for lines or beds it is admirable. It is a most profuse bloomer, and the colour is so very distinct; it is described as bluish crimson, and there is certainly a suffusion of blue in the lower petals. Wellington is of a different type; it is a hybrid nosegay, and is far in advance of any other flower in this section. The habit of the plant is not so good as that of Ianthe, but it makes a telling bed; the flower-trusses are immense, and the peculiar rich maroon-crimson of the flowers at once catches the eye. These varieties are also exceedingly effective as decorative plants for the greenhouse or conservatory, and I can recommend them as worthy of being added to any collection, however select.

The Double Zonals are not so much grown as they deserve to be. I selected a few dozens of *Madame Lemoine*, *Marie Lemoine*, and *Victor Lemoine*, and planted a small bed of each this season for trial. The rose-colour of the first two is very pleasing and has a distinct effect, and the trusses have not suffered from the rains so much as one would suppose. I also find them invaluable for planting in mixed borders; they are highly esteemed for cutting, and are freely used in button-hole and other bouquets, for the petals do not drop off as they do in the single varieties. I noted a very distinct new rose-coloured sort sent by Mr. Turner, of

Slough, to the last meeting in July, at South Kensington ; the roses are very numerous, but this one, named Madame Hock, is, I think, an acquisition.

I would like to recommend a bed which I admired very much in the North last year ; it was certainly the most pleasing feature in several good gardens. It is not new to many of your readers, but may be to some, and is only a mixture of Purple King Verbena and Mangles' Variegated Pelargonium ; the purple flowers of the Verbena mingled with the white foliage and pretty pink flowers of its companion were charming.—J. DOUGLAS, *Loxford Hall, Ilford*.

THE IMPORTANCE OF DRAINAGE FOR ROSES.

THIS is one of the lessons taught by the present exceptionally wet summer : —On undrained ground, the Rosery has become a pond or a swamp. It has been at times quite flooded, and altogether inaccessible. The Rose^s bore it well for a season, growing away luxuriantly, and pushing forth rare cupfuls of sweetness, flooding the top with beauty,—as a means of drying up the river at their roots. But as it rained and rained heavier day by day, and all night also, and almost incessantly for weeks together, the roots were drowned, the sap-vessels were water-gorged, and the leaves became mashed or starved into a pale green, bordering on albinism ; growth was arrested or robbed of all strength and vigour, and the Roses have lingered on to become victims of the first trial that the winter or spring has in store for them.

The Rose season has, at best, been capricious and short. Hardly was the time of Roses fairly here, when we could only say that it was past. And this brevity of the Rose season was the more conspicuous on undrained ground. The water seemed to force the Roses off, as if they had had to breast the stream of a mill-sluice. Perhaps they had, but the sluice was the stream of life, emptied of nourishing sap, and filled to repletion with water. No wonder, then, that the Roses were flushed off, and quickly faded away.

Where the drainage was more perfect the Roses also suffered from the heavy rains, but not in the same way, nor to the same extent. If their heads were ever so wet, their feet at least were kept comparatively dry. The rain passed over, and it was gone. They were not compelled to have their feet in a bath compounded of mud and water ; consequently there was no gorging of crude food, nor deterioration of the sap, and the Roses have held their own. With the exception of growths of extraordinary strength and succulency, which cry out for sunshine to ripen them before the frost comes, such Roses present their usual appearance. They have hoisted no signs of root-distress in the shape of semi-blanching shoots ; on the contrary, the leaves are as green as grass, and they are throwing out countless autumn buds of extraordinary fatness.

The contrast between Roses drained and undrained has been brought into prominent relief this season, and we trust the result will be that, whatever else is done or left undone this winter, the Roses that need it will be thoroughly drained.—D. T. FISH, *Hardwicke*.



CROTON VARIEGATUM INTERRUPTUM.

WE have here another of the fine varieties of Croton (*Codiaeum*) introduced by Mr. John Gould Veitch from the South Sea Islands. It is a singularly curious plant, the twisting and interruption of its leaves being very remarkable. Messrs. Veitch and Sons, who have kindly lent us the figure, describe it as a finely marked red variegated variety, very graceful in habit, forming an excellent companion to the yellow *C. irregulare*. The name

alludes to the peculiarities of the leaves. While some are of the ordinary shape, others have the midrib extended into a horn, or have portions of the lamina, sometimes an inch or two in length, wanting, or taking on a decidedly spiral twist. The leaves average nearly a foot in length, and are of a dark green, the midrib being of a bright red. This makes it exceedingly effective.—T. M.

FRUIT CULTURE.—SEPTEMBER.

ATTEND to the protection of all ripening fruit, and to the gathering of it, when fit. Flies, wasps, earwigs, and wood-lice are great pests to ripening fruit, and if not destroyed, will often spoil the finest; therefore, spare no pains to trap and destroy them. Great care is required in gathering fruit for keeping. Go frequently over the trees, and gather only as they ripen. *Peaches*, *Nectarines*, *Plums*, &c., will improve in flavour if laid on the shelves in the fruit-room for a few days after they are gathered from the trees. *Pears* should be laid singly on the fruit-room shelves, and *Apples* should not be laid more than two or three deep. Keep the fruit-room cool and dry, and occasionally examine the fruit, and pick out all decaying ones. Cut away all the *Raspberry*-canes that are past bearing, if not already done. Continue to make fresh plantations of *Strawberries*, and clear away all runners and old leaves from old ones intended to remain another year. Commence preparations for planting next month, and go at once to the Nurseries and select young plants; at this season there is generally plenty to choose from, but later on in the season most of the best plants are sold out, and good plants not so easily got at.

IN-DOORS.—If the *Pine* plants bearing fruit for the autumn and winter supply have been all got together in one house, as recommended last month, they can now receive proper attention; they should have a rather high temperature and moist atmosphere, with a bottom-heat of about 85°, and a top-heat of about 70° at night, and about 80° in the day, with an increase of a few degrees by sun-heat; they should have liberal supplies of water until the fruit approaches maturity. The plants intended for fruiting in the spring should now be put into their winter quarters, renewing in part or entirely the materials for bottom-heat. The succession plants will now be making rapid vigorous growth, and should have liberal supplies of water, and an abundance of air, especially in the forenoon; they should be shifted without delay, if not done last month as recommended, and the beds renewed either in part or entirely before they are fresh plunged. Guard carefully against the fresh material over-heating; the bottom-heat should not vary much either above or below 85°, and the night temperature should not fall much below 65°. The *Vines* in the early-houses should now be pruned; spare no pains to get the wood well ripened in houses where all the grapes are cut; maintain gentle fires in houses where grapes are ripening, and give abundance of air at every favourable opportunity; all laterals may now be cut close off to admit more sun and air to the fruit. Keep houses with ripe grapes cool and dry. The early *Peach* houses should now be in a state of perfect rest; remove the

lights, that the trees may have the benefit of full exposure to the weather; pay every necessary attention to the ripening of the wood in late houses; keep the borders well watered. When the *Figs* are all gathered, syringe the trees well, give plenty of air, but no more water than is necessary. Pay attention to *Strawberries*; keep them well watered, and remove all runners.—M. SAUL, *Stourton*.

OLD NEGLECTED ROSES.

ROSE gossip is, I do not hesitate to say, as acceptable to-day as would be the discussion of the merits of Floriculture's latest offspring. In these few stray notes on old Roses I have no intention to enter on the subject of modern Rose-growing, already being so ably dealt with in your pages. I would rather draw from their undeserved seclusion one or two old favourites, which seem to have been forgotten amid the rage for novelty.

Who that has once seen the peculiarly-tinted copper-coloured *Austrian Brier* would tire in its possession, and yet where is it grown now? Though still in its primitive singleness, the buds and the full-blown petals are so remarkable in colour as to stamp it as a favourite for all time. What say the hybridists? Is there here no fresh blood, no means of painting a double bloom with such a tint? Fortunately *we* write from the 'love' of Roses. There is, however, in some old Rose gardens an historical emblem of the 'strife' of the Roses; but who are the fortunate possessors of a duplicate of the old striped *York and Lancaster*? Here, again, might not the hybridist 'try back,' and, if possible, place the crimson sash of a General Jacqueminot upon the pure white petals of the old White Provence—if no other?

Yellow Roses, the old primitive yellows *Austrian* and *Persian*, seem little understood by the world outside professional floriculture. It is too generally believed that the very beautiful Double Yellow Persian is the Austrian Double, which, however, all who are conversant with it know it is not. The latter has not a tithe of the beauty, whether of form or colour, which the former possesses. If the Double Yellow Persian has a fault, it consists in the fact that it blooms freely only from the long strong shoots of a previous season's growth, and hence must not be pruned back, as roses are in general. Then for an edging—a dwarf edging, some 8 in. to 12 in. high, and as much through if you wish it—what can be more beautiful than the old nearly double, though more strictly semi-double, pink and white *Scotch Roses*.

It has long become a by-word that we have no showy-flowered evergreen climbing plants that are hardy, nor am I able to prove the contrary. Now I would not say a word for the beauty of the showy old *Rosa multiflora* or *Boursault* varieties, in so far as their blooms go, for they are poor, indeed, in comparison with our modern Roses. The Boursaults, however, are rampant growers, clothing walls, bowers, or indeed house-sides, in a very short time; and blooming, as they do, *en masse*, they form very pleasing objects indeed. They possess, moreover, the merit of carrying their pleasing green foliage until the first severe frost comes


in midwinter. The hedge of Roses which I made at Digswell, and which you referred to in these pages, was composed primarily of these, and they kept green at least nine months out of the twelve. Then, again, what a stock this is to bud upon; hereon you can grow the best of Roses, in incongruous and delightful variety. "Budding" may be performed on the old as well as upon the young wood, and stilts may thus be made for the lowliest varieties, to display their blooms aloft, even on a gable-end.

But there is another old Rose greatly, though undeservedly neglected—a Rose which needs no pruning, according to the general acceptation of the term, which has quaintly beautiful foliage, and buds that last "whilst other Roses blow and fade." I refer to the *Macartney Rose*, than which none are more beautiful for the garniture of bare walls. Not only does it require little or no pruning, but it is one of the earliest to assume a verdant foliage unsurpassed by any plant we possess for wall-furnishing, whilst its buds of matchless purity last so long in their beauty; it has besides the merit of blooming in the autumn, or, at least, late summer, a season when few nice fresh Roses can stand against the adverse heat, and the aridity of the atmosphere. This it does without symptoms of flagging, or losing its foliage, as other Roses do under such circumstances. The full-blown flowers stand longer than any other sort, the full day's sun upon a sunny aspect against the wall. Finally, the Macartney Roses are thoroughly hardy, the severest frost doing them no injury. Would that I could speak with equal favour of the beautiful Banksian Roses in this latter respect. They are greatly neglected—Lady Banks', and Fortune's lovely pure white variety, in particular. For walls few things are prettier, if they can be guaranteed against the harsher onslaughts of frost.

In conclusion, I refer to the old Miniature or Fairy Roses—those little gems, with buds so fairy-like, that used to please our youthful fancies when purchased in the smallest of tiny pots! Where are they now? Our memory claims them still, but actual possession seems almost a thing of the past. Recently, I purchased two or three varieties of what I was informed was the Fairy Rose, at one of the chief emporiums of Roses, but found them wanting in the peculiar features of those I sought for. I met, months since, with a very pretty batch of Miniature Roses grown in small pots for indoor decoration—I believe at the Panshanger Gardens, under the able charge of Mr. Ruffitt; but even there the true variety was wanting.—WILLIAM EARLEY, *Valentines, Ilford*.

PICTURES OF PALM-TREES.

ATTALEA SPECIOSA.

 HIS elegant Palm is remarkable for its erecto-patent leaves, which are tall and elegantly pinnated, the long narrow spreading pinnæ being so disposed as to give the leaves almost a pectinate appearance. This peculiarity is very well shown in the accompanying figure, from *Les Promenades des Paris*, for which we are indebted to the publisher of that work.

The plant in its native habitat forms a straight cylindrical stem from fifty to sixty feet in height, crowned with the noble pinnate leaves. The leaflets are rigid and closely set, while the sheathing bases of the petioles are persistent



ATTALEA SPECIOSA.

more or less down the stem, and in young plants reach to the ground. The leaves of this palm are much used for thatching, those of the younger plants, which are larger, being preferred. According to Mr. Wallace, it grows on the dry forest lands of the Upper Amazon.—T. M.

KITCHEN GARDENING FOR SEPTEMBER.

DIS-**ENCOURAGE** the growth of vegetables by frequently hoeing and stirring the soil between them. Continue to earth up all advancing crops of *Cauliflowers*, *Broccoli*, and *Winter Greens*; also *Celery*, when dry. If the stems of *Onions* were laid close to the ground last month, as advised, the general crop will now be fit for harvesting; they should be pulled carefully and laid singly for a few days to dry, and when fit should be tied in strings, and hung up in some dry airy out-house or shed. *Cabbages* for next spring may be planted after *Onions*, but the ground should have a good dressing of manure, and be dug deeply, and the *Cabbages* should, in the North, be planted before the middle of the month; they will then get established before the dull, short days come on, and will be better able to withstand the attacks of slugs and bad weather than if planted out later. Continue to clear away *Peas*, *Beans*, and other vegetables past bearing, and either dig and plant fresh crops, or trench or ridge the ground. Take up *Potatos* when fit and dry, and store away, taking care to pick out the diseased ones; they are going fast in many places, and the loss is likely to be very great. Thin the *Winter Spinach* sown last month to about six inches apart, and the *Turnips* sown last month to about nine inches or a foot apart. Prick out the *Cauliflowers* sown last month as they advance in growth, under hand-glasses and in frames. Tie up *Endive* to blanch, and plant out for a late crop on a warm border. Plant out large breadths of the hardy *Lettuces* sown last month on warm borders at the foot of south walls, and other sheltered places. Sow *Radishes* twice on a south border, and *Mustard* and *Cress* weekly.

Weeds have been very troublesome this season, the excessively heavy falls of rain and the warm weather causing them to grow amazingly fast, and the saturated state of the soil at times making hoeing of very little use. Should the rains continue, it will be no easy matter to keep weeds down when the short days come on. Keep the hoe constantly going whenever the state of the weather permits. At this season of the year weeds grow apace, and nothing but unceasing perseverance in hoeing and cleaning will keep them under.—M. SAUL, *Stourton*.

GARDEN GOSSIP.

OUT-DOOR *Fruits* are almost a failure, as is shown by the reports on the *State of the Crops* recently published by the *Gardeners' Chronicle*. From Scotland, from Cornwall, from Lincolnshire, from Western Ireland, from high lands, from low lands, from the sea-side, from the midland plateau, from the light sand, from the stiff clay, from the dry limestone, from sheltered situations and favourable aspects, from bleak exposed places, everywhere the tale is alike disastrous. The mischief was done, as is so often the case, by spring frosts, the only difference being that this season they have been general over the whole country. In February we enjoyed a temperature more befitting April or May. For four nights only during that month did the thermometer fall below freezing-point; for ten nights in that same month it did not go below 40°. Vegetation was thus stimulated into unnatural precocity, to meet with the rudest check. The period from May 10 to May 20 was particularly disastrous, from the severity of the frost,

all over the country. Now what is the moral to be drawn from all this? It is the same we have had to point out before, and the circumstances of the present year do but add intensity to it—more protection; and that protection must be glass.

— **THE Duke of Buccleuch Grape** is a new white summer Grape of considerable merit, raised by Mr. W. Thomson, of the Tweed Vineyard, Clovenfords. The variety is remarkable for the immense size of the berries, their beautiful colour, transparency, and delicate bloom, along with the compact and solid character of the bunch. The berries are of an oblate form, and supported on stout stalks, and the bunches are compactly branched after the manner of a Black Hamburgh. This variety was raised by Mr. Thomson seven years ago, and had established itself so well in his confidence at Dalkeith that he decided on planting it largely in his own place. One berry, taken as a fair sample of size, when weighed and measured, was found to weigh within a fraction of three-quarters of an ounce, and to measure $1\frac{3}{8}$ inch in diameter. Specimens which were recently shown at South Kensington were awarded a First-class Certificate on the special report of Mr. Barron, who was deputed to examine the growing vines. From this report the following is an extract:—“I visited Clovenfords, and saw the vines growing there. Mr. Thomson has it planted extensively,—1st, 22 vines in one house at 6 feet apart, two rods to each vine, the rest of the house being filled with Black Hamburgh, &c.; 2nd, about 40 vines on either side of a span-roofed house, at 9 feet apart, three rods to each vine, the rest of the house being filled with Muscats, &c. The whole of these vines were planted in the autumn of 1870. The greater portion of the crop (300 lb.) had been cut previous to my visit; there were still, however, about 250 bunches hanging, which enabled me to arrive at a pretty good idea of its bearing qualities. There was a singular uniformity in the appearance of the whole, both as regards the growth of the plants, general productiveness, size, colour, and general appearance of the bunches and berries. In growth it somewhat resembles Canon Hall Muscat, Mill Hill Hamburgh, and Golden Champion, the shoots being rather gross and generally well ripened, the leading shoots being very strong, and thoroughly ripened, of about the thickness of one's thumb. I could detect no spot or other blemish on the berries, whereas the Golden Champion alongside, although large and well grown, was much spotted. As to ripening, in comparison with the Black Hamburgh grown in the same house under the same circumstances, it was much earlier—evidently some weeks. Few of the Hamburghs were ripe or fit to cut, whereas the most of the Duke had been cut and sent to market a month previously. The Hamburghs were, however, overcropped, which tends to retard the ripening. The Muscats under the same treatment had not begun to colour, whilst the Duke was dead ripe. Each vine seemed to have fruited as freely as a Black Hamburgh, one bunch to each spur, the bunches being of a fair average size, of from 1 lb. to 2 lb. each, and some larger. Grafted on the Muscat, it did not seem to do so well. The Grape will evidently not keep long after being ripe, being thin-skinned; it is extremely pleasant to eat, the flesh tender and juicy, with a rich sparkling acidity, somewhat of the Hamburgh character. The berries are enormously large, round or oblate, like the Dutch Hamburgh, and have rarely more than two seeds in each. I should describe it as a very valuable summer Grape.”

— **WE** are glad to have to note that the charge of the *Royal Gardens at Frogmore* has been entrusted to Mr. Thomas Jones, who has been for the last 15 years in the service of Lord Leconfield, at Petworth, and who had previously lived with Mr. Kelk, at Bentley Priory, Stanmore, and Admiral Vernon Harcourt, at Swinton Castle, Yorkshire; in early days he had been employed at Crewe Hall, Trentham, &c. Mr. Jones is well known as a practical gardener of eminence in his profession.

— **DR. MOORE** has recently fruited in the Glasnevin Botanic Garden the *Lucuma obovata*, a tropical fruit, native of temperate Peru, and cultivated in the gardens in Chili. It had fruited this year for the first time probably in this country, and appeared to be very little known.

— **THE *Amaranthus salicifolius***, sent out by Messrs. Veitch and Sons, proves to be a most useful summer garden plant, when not grown too hot and close. The plant is a half-tender annual, and Mr. Denning tells us that it requires to be sown about the first week in April, and treated as a tender annual until the middle of May, after which time it may be gradually hardened off, and by the middle of June planted out-of-doors, where it will require no further care. It will not look very well for

about a month, but as July goes out and August comes in, it will be the most conspicuous object in the flower-garden, and will draw every one's attention, not only because of its brightness of colour, which is of an intense crimson-orange, but also because of its most graceful habit. It grows about 18 in. to 2 ft. high, and forms a fountain-like pyramid.

— BY means of careful and judicious selection, Mr. R. Dean believes he has obtained some useful novelties amongst *Bedding Violas*. They belong to three distinct types—true bedding Violas, true bedding Pansies, and Tom Thumb bedding Pansies, the latter representing an entirely new break of a remarkably dwarf and compact habit of growth. Among the bedding Violas, one named *Blue Bell*, violet, shaded with blue, and with dark indigo lines radiating from a yellow eye, has continued flowering from the second week of March until August, and will no doubt continue through the summer. A seedling of the *V. lutea grandiflora* type, which has been named *Corisande*, is pale primrose, and its flowers, which are produced freely and continuously, are of a greatly improved form. Of the Tom Thumb type, six varieties have been selected for distribution, all possessing a dwarf and compact habit of growth, and producing an abundance of small well-formed flowers throughout the summer. *Blue Gem* has pale violet-blue lower petals, the upper ones being also of a shaded violet tint. *Little Gem* much resembles it, but is of a brighter shade of violet; *Lily White* and *Painted Lady* are both white forms, the former having a few dark lines radiating from a small yellow centre; the latter having the top petals blotched with violet-purple; *Yellow Boy* produces a dense mass of clear pale yellow flowers; and *Plum-ripe*, bright shaded mulberry, is the most novel in colour of the whole.

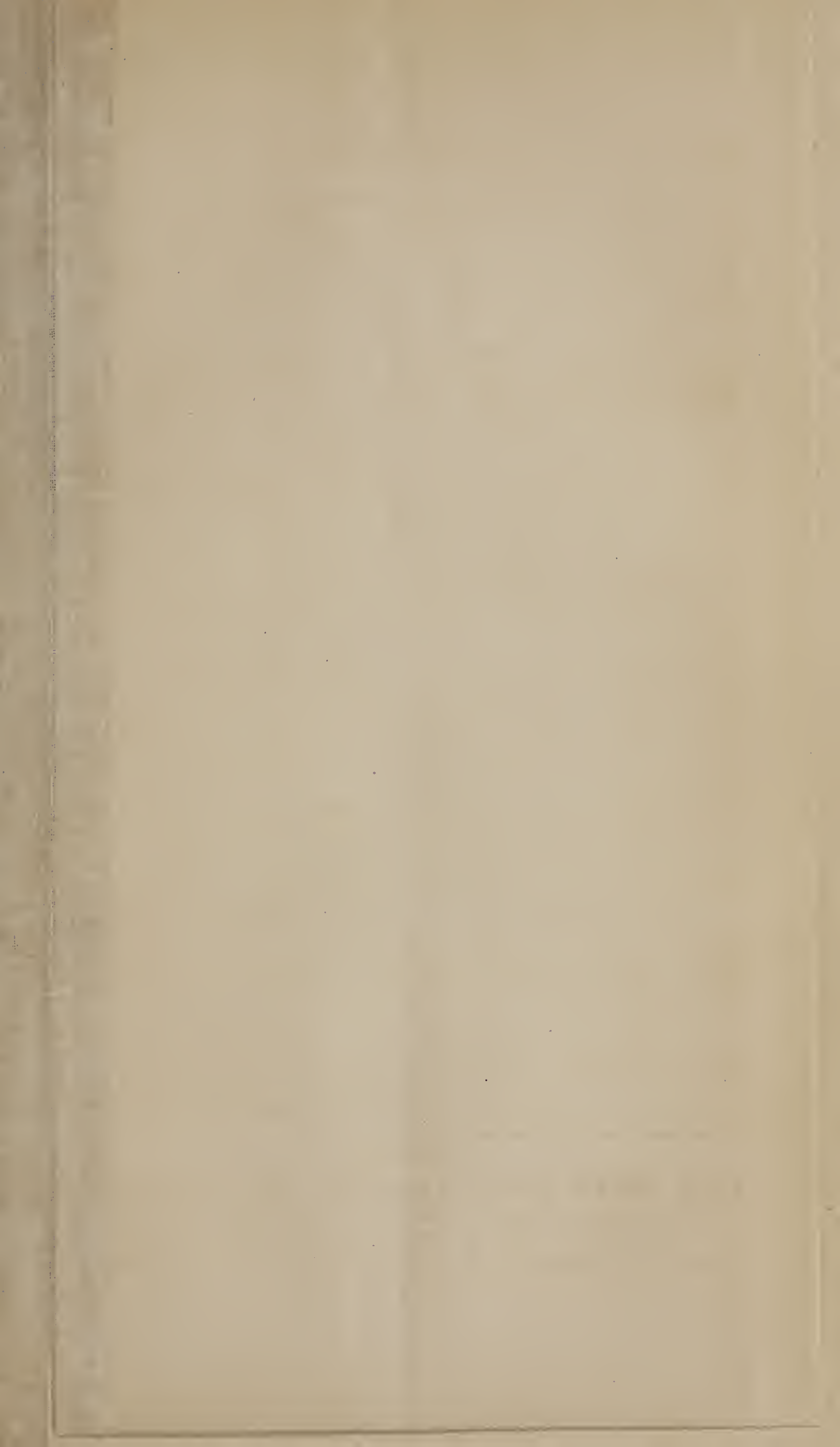
— THE researches of MM. Duchartre, Prillieux, and others have shown that under ordinary circumstances the *Leaves of Plants* have no power of *absorbing Water* or watery vapour, a conclusion which seemed at variance with the results of daily horticultural practice. These recent experiments have but confirmed this view, which seems now to be so well established, that it must take its place as an axiom of vegetable physiology; but while this doctrine has been fully confirmed, it has also been found that though leaves do not absorb water all the time the plants can get sufficient supplies by the roots, yet directly the soil gets too dry for the roots to absorb moisture, the leaves absorb what they can get to supply the deficiency. This is more in accordance with the experience of horticulturists.

— THE *Phylloxera vastatrix*, the too fruitful source of the Vine Disease, has now spread over England, France, and Portugal, and has also made its appearance in Switzerland, so that there can be little hope that the Rhine and the Moselle districts will escape much longer. Leaving Nature's own operations out of the question, the trade and exchange of choice varieties of hothouse vines and hardy seedlings are now so extensive, that man is the real carrier of the pest. It has been suggested, in order to avert the threatened destruction of wine-growing over Europe and America, that the Governments which are enlightened enough to offer enormous prices for a sure remedy to destroy the insects should fight the enemy *ab ovo*, thus confining its depredations to its present centres of dispersal, and eradicating it there by stopping the distribution of canes and seedlings from countries at present occupied by the *Phylloxera*.

— THE seed of *Primula japonica*, which is very small, is very freely produced; the pods are about the size of those of a well-filled *Polyanthus*, and contain each about one hundred seeds of a dark brown colour. When sown as soon as ripe a fair crop is found to germinate in the course of a short time. This is the natural mode of treatment.

Obituary.

— MR. JAMES IVERY, of the firm of Ivery and Son, of Dorking, Surrey, died on the 2nd ult., in his 49th year. Mr. Ivery had for many years been known as a raiser and exhibitor of Indian Azaleas; and of late years, as having worked up one of the most extensive and valuable trade collections of British and other hardy Ferns to be met with at the present day.





WALTHAM CROSS GRAPE.

THE WALTHAM CROSS GRAPE.

WITH AN ILLUSTRATION.

THIS fine Grape is one of many seedlings exhibited before the Fruit Committee of the Royal Horticultural Society in the autumn of last year, and was awarded a First-class Certificate. The form of the bunch and berry, and the colour, are well indicated in our plate, but it should be stated that the largest berries on the bunch then shown, from which our plate was taken, were from $1\frac{1}{4}$ to $1\frac{1}{2}$ in. long. It is a late variety, hanging on the vine till spring. The constitution is hardy, the vine bears abundantly, and the berries set freely. Although the berry resembles the Muscat of Alexandria in size and form, the flavour and other characters are akin to the Black Hamburgh. The *Gardeners' Chronicle* speaks of it as a "handsome bunch. . . . useful, showy, and distinct." The *Journal of Horticulture* says:—"Mr. William Paul, of Waltham Cross, exhibited a bunch of his new Grape, Waltham Cross, in splendid condition. The bunch was very large, and the berries immense. This received a First-class Certificate at a former meeting, and was again much admired." It will be sent out by Mr. William Paul in the spring of 1873.

It may be expected to prove a fine late-keeping white Grape. The bunches are very large, tapering, and well-shouldered. The berries also are very large, oblong oval in shape, of a pale and very pure and clear amber-colour; the skin membranous, enclosing a firm solid flesh, with a sweet and pleasant flavour. It will be a desirable companion for Lady Downe's Seedling.—T. M.

TREE OR PERPETUAL-FLOWERING CARNATIONS.

THIS is a most useful class of plants; and where cut flowers are required during the winter months, either for button-holes or bouquets, they are indispensable. They are perpetual, and where several plants are grown blooms can be cut from them almost all the year around. Not only are they useful for this purpose, but if grown as specimens they would make excellent plants for exhibition purposes. Collections of them have been exhibited during the last spring, and fully proved to be a leading feature, Carnations and Picotees being quite a new introduction at the spring meetings. They are comparatively of easy culture; since they grow freely, and bloom profusely. They are very attractive, the flowers being mostly self-coloured, of various shades, generally brilliant in hue, and also very fragrant, particularly the white-flowered varieties.

The best mode of propagating them is by cuttings. These should be struck early in March, and grown out of doors during the summer months, keeping them repotted as they require it, until they get into 6-in. or 8-in. pots. The most suitable soil for them is two-fourths good turfy loam, one-fourth good rotten manure, and one-fourth peat, with the addition of some silver-sand. Before using it take care to examine the soil to clear it of wireworms, which are so very

destructive to this class of plants. Keep the shoots properly secured, as they are liable to be broken off with the wind. The plants generally bloom in the second year much more profusely than the first. They may be grown to a large size, up to two or three years old, but after this they become less vigorous and should be replaced by young plants. They should be placed in a cool green-house early in October, giving them plenty of air, and keeping them clean from green-fly, which is sometimes very troublesome. Some very fine new varieties have been exhibited during the last spring, and several of them have been awarded First-class Certificates. The following are recommended :—

Princess Christian (Turner).—A fine bright pink, fading to a beautiful peach-colour; a good large flower, and very distinct; extra fine.

King of the Belgians (Turner).—A beautiful deep rose-colour; a fine large flower, and a very free-blooming variety; very fine.

Empress of Germany (Turner).—A fine large white, very slightly marked with bright rose; fine full flower, and good shape; extra fine.

Princess Beatrice (Turner).—Very fine bright rose; fine petal, good-shaped flower, and very profuse-blooming; extra fine.

Queen of the Belgians (Turner).—A good large white; fine stout petal, slightly striped with bright rose; very free and very fine.

Caliban (Turner).—A good bright Rose Flake, large and well marked; very fine.

Marchioness of Westminster (Turner).—Deep rose; a very fine, large, good-shaped flower, and very profuse-blooming; extra fine.

Deloche.—A fine large full flower; fine smooth petal, heavily edged with bright rose; very fine and very distinct.

Rosy Morn (Turner).—Large deep rose; a very profuse-blooming variety.

Delicata (Turner).—A light purple-edged Picotee; a very free, good useful flower.

La Belle (Blackley).—Pure white; fine large full flower, good large petal, and tolerably smooth; a most profuse-blooming variety. The 'grass' of this variety is slender and wiry; it grows very freely, and produces shoots or flower-buds at every joint, and would, if required, make a useful variety for growing over trellises.

Celestial (Turner).—Heavy, rose-edged Picotee; very free, and quite distinct.

Model (Lee).—French white, medium-sized, good stout well-formed petals, and very robust habit; fine.

Miss Jolliffe (Masters).—Pale pink or flesh-colour; a very nice flower, and remarkably fragrant; very fine.—J. BALL, *Slough*.

OUR GARDEN PITCHER-PLANTS.

ON previous occasions we have adverted to the cultivation of these very interesting plants, and we now add, condensed from the pages of our weekly contemporary, the *Gardeners' Chronicle*, a brief descriptive notice of the species and varieties at present existing in our gardens. The nomenclature is in accordance with that adopted by Dr. Hooker, in a monograph of the genus prepared for De Candolle's *Prodromus*, and may therefore be regarded as authoritative. The more essential distinctions are considered by Dr. Hooker to reside in the form of the seed, winged or wingless, the form of the female flower and ovary, and the nature of the inflorescence. As far as the pitchers are concerned, the main differences consist in the form, the presence or absence of wings, the ribbing of the mouth, the size and shape of the lid, &c. The descriptions apply more especially to the foliage and the pitchers :—

1. *NEPENTHES DISTILLATORIA*, *Linn.*—Stem glabrous; leaves glabrous, elliptic-lanceolate, with a broad, winged, stem-clasping stalk; pitchers 4—6 in. long, 1—1½ in. in diameter, tubular, slightly dilated at the base, wingless, mouth somewhat heart-shaped, margin narrow, lid

sessile roundish smooth, studded on the inner surface with small glands.—Ceylon. What is commonly grown under this name is *N. khasyana*.

2. *N. AMPULLARIA*, *Jack.*—Stem covered with rusty down; leaves smooth above, downy beneath, elliptic or obovate lanceolate, narrowed at the base into a short, winged, partly sheathing stalk, lower pitchers clustered, leafless, subglobose, downy, green, purple-spotted, 1—2 in. in diameter; upper pitcher tubular, swollen on one side, with two fringed membranous wings; mouth circular, glandular within; margin broad, infolded, striated; lid sessile linear-oblong, much smaller than the mouth, flat, narrowed at the base, downy without glands.—Singapore, Malacca, Sumatra, Borneo. There are two varieties of this in cultivation, called, respectively, *N. a. vittata*, and *N. a. vittata major*.

3. *N. VEITCHII*, *Hook. fil.*—Stem villose; leaves covered with reddish hairs beneath, variable in shape and size, always tapering at the base into a short thick stem-clasping stalk; pitchers 6—12 in. long, 3—4 in. in diameter, pubescent, tubular, narrowed at the base, winged, wings fringed; margin very broad, and, like the throat, prominently incurved, pectinate; lid smaller than the mouth of the pitcher, stalked, studded with glands on the inner surface, oblong, keeled.—Borneo, 2,700 feet. This is the plant grown as *N. villosa* and *N. lanata* in gardens.

4. *N. RAFFLESIANA*, *Jack.*—Stem cylindrical; leaves variable in size and form, pubescent when young, afterwards glabrous, lower ones tufted lanceolate, upper ones oblong, with a thick stem-clasping petiole; lower pitchers 5—8 in. long, 3—4 in. in diameter, greenish-yellow purple-spotted, dilated flask-shaped, with crested wings; upper pitchers 6—12 in. long, funnel-shaped, wingless, margin inflexed convex ribbed, ribs ending in small spiny points directed downwards, prolonged at the back into an erect dilated pectinate lamina; lid stalked, ovate or roundish, studded with rather large glands on the inner surface.—Singapore, Sumatra, Borneo, &c. The plant grown in gardens as *N. Hookeri* is merely a form of this species, of which there are two well-marked varieties:—*nivea*, which is covered with snow-white down; and *glaberrima*, which is entirely glabrous.

5. *N. PHYLLAMPHORA*, *Willd.*—Stem cylindrical; leaves puberulous when young, elliptic lanceolate, younger ones denticulate at the margins; petiole winged, partly stem-clasping; pitchers cylindrical 4—6 in. long, not winged; mouth roundish, glaucous within, margin convex incurved ribbed, not prolonged at the back; lid oblong orbicular, smooth within but sprinkled with glands.—Malay Archipelago, China.

6. *N. SANGUINEA*, *Lindl.*—Stem triangular, glabrous; leaves subsessile cordate, stem-clasping, obovate-oblong; pitchers 12 in. long, 2—2½ in. wide, downy, dark crimson, cylindrical (younger ones winged, dilated at the base), margin broad, prolonged at the back into a broad lamina; lid oblong or orbicular, densely sprinkled with glands on the inner surface, provided with a spur-like process at the base on the outer surface.—Malacca.

7. *N. KHASIANA*, *Hook. fil.*—Stem stout, glabrous; leaves 1—2 ft. long, 1½—3½ in. wide, sessile, stem-clasping, decurrent, tapering towards the base, acute or acuminate; downy when young along the nerves, afterwards glabrous; pitchers 4—7 in. long, 1½—3 in. in diameter, tubular, slightly dilated at the base, glabrous, green or reddish (in young plants winged); mouth heart-shaped striated; lid sessile orbicular, thickly studded with glands on the inner surface.—Bengal, Madras, Courtallum. This is the plant commonly grown in gardens as *N. distillatoria*. There is a form of it in cultivation, grown under the name of *N. rubra*.

8. *N. ALBO-MARGINATA*, *Lobb.*—Plant covered with whitish or fuscous down; leaves 8—14 in. long, ½—1¼ in. wide, elliptic lanceolate, narrowed at the base, subsessile, slightly decurrent, downy beneath, ultimately nearly glabrous; pitchers 3—5 in. long, 1—1½ in. wide, funnel-shaped or cylindrical, green, purple or purple-spotted, downy, younger ones dilated at the base and provided with two fringed wings; margin thickly ribbed, slightly prolonged at the back; throat glaucous within; lid sessile, downy outside, sprinkled with glands on the inner surface.—Singapore, Borneo, at an elevation of 2,500 feet. There is a variety called *villosa* with the stem densely setose, and the pitchers whitish, from Borneo.

9. *N. GRACILIS*, *Korthals.*—Stem glabrous, 3-cornered; leaves 4—7 in. long, 1 in. wide, coriaceous, oblong-lanceolate, sessile, decurrent; pitchers 2½—4 in. long, glabrous, cylindrical, dilated at the base, narrowed in the middle, with two fringed wings; upper or older pitchers destitute of wings, throat glaucous blue, inflected margin narrow striate; mouth of pitcher not prolonged at the back; lid cordate, orbicular, slightly glandular within.—Malacca, Singapore, Sumatra, Borneo; 1,500 feet.

10. *N. TEYSMANNIANA*, *Miquel.*—Stem slender, 3-sided, glabrous; leaves coriaceous, sessile, partially stem-clasping, scarcely decurrent, lanceolate-acuminate; pitchers elongate-cylindrical, lower ones distended, upper ones slender, glabrous; mouth ovate, not prolonged at

the back ; margin narrow, slightly ribbed ; lid orbicular, slightly glandular within.—This species, which closely resembles *N. gracilis*, is the *N. levis* of gardens.

In addition to these, there are in cultivation certain hybrid forms raised by Messrs. Veitch, namely :—

11. *N. CHELSONI*, *Hort. Veitch*.—Stem downy ; leaves, including the petiole, 16—18 in. long, 3—4 in. broad, glabrous, oblong, tapering and decurrent at the base ; petiole $3\frac{1}{2}$ in. long, stem-clasping ; pitcher 3—4 in. long, $2\frac{1}{2}$ in. broad, purple spotted, broadly flask-shaped, with two projecting membranous ciliolate wings ; mouth of pitcher oblique, margin involute ribbed ; lid about $1\frac{1}{2}$ in. across each way, nearly orbicular, pale green in the centre, purple, and dotted with glands near the margin, 2-nerved, shortly stalked ; stalk with two projecting purple striated wings, and with an excurrent deflexed rib at the back.—This form is a cross between *N. Rafflesiana* (*Hookeri*), which was the male parent, and *N. Dominii*, the female parent, the latter being itself a hybrid. The pitchers are somewhat like those of *N. Rafflesiana*, but broader, and with the mouth less prolonged at the back.

12. *N. SEDENI*, *Hort. Veitch*.—Stem glabrous ; leaves 7 in. long, $1\frac{3}{4}$ in. wide, coriaceous, glabrous, lanceolate acuminate, decurrent at the base ; pitcher (probably not fully developed) 3 in. long, 1 in. wide, oblong, dilated at the base, narrowed above the centre, and again slightly expanded towards the top, and provided with two ciliolate wings ; mouth of the pitcher ovate striated, prolonged at the back into a triangular process bearing the lid, which latter is cordate, orbicular, purple spotted, ribbed, and provided with a short projecting spur-like process.—This form is stated to have been raised from the pollen of *N. khasyana* (*distillatoria*) applied to the female flower of an undetermined species.

13. *N. DOMINII*, *Hort. Veitch*.—Stem purplish, slightly downy ; leaves glabrous, elliptic lanceolate, tapering at the base, and decurrent along the sides of the petiole ; pitcher 6 in. long, 2 in. wide, oblong, deeply winged, wings purple, spotted and fringed at the margin ; mouth infolded at the edge, furrowed, prolonged at the back into a long tapering striated process about an inch in length ; lid oblong, 2 in. long by $1\frac{1}{4}$ in. wide, smaller than the mouth of the pitcher, speckled with purple glandular dots, ribbed at the back, and provided at the base with an excurrent recurved process.—This form is stated to have been the result of the fertilisation of the female flowers of *N. Rafflesiana* with the pollen of an undetermined species from Borneo.

14. *N. HYBRIDA*, *Hort. Veitch*.—Stem glabrous ; leaves oblong-acute, tapering at the base into a short stalk, glabrous, except on the under-surface along the central rib ; pitchers 5 in. long, membranous, green, or with a few purple spots within, cylindric, oblong, winged, wings fringed ; mouth ovate, margin infolded, striated, prolonged at the back into a triangular neck, bearing the lid ; lid as large as the mouth of the pitcher, oblong, speckled, glandular within, multicostate, with a short thin mucro projecting from the base.—This form, and the succeeding one, are stated to have originated from seeds taken from the same capsule. The male parent is stated to have been *N. khasyana*, the female an unknown species from Borneo.

15. *N. HYBRIDA MACULATA*, *Hort. Veitch*.—Stem glabrous ; leaves glabrous, coriaceous, oblong-lanceolate ; pitchers 5 in. long by $1\frac{1}{2}$ wide, cylindric, oblong, purple-spotted, slightly contracted above the middle, winged, wings ciliated ; mouth ovate, margin infolded, striated, prolonged at the back into a deltoid process bearing the lid ; lid oblong, $1\frac{1}{2}$ in. long, 1 in. 2 lines wide, mouth ribbed.—This form resembles *N. Boschiana* in the pitcher, but is winged.

One of the finest examples of high cultivation in this family which has ever been produced is that represented in the accompanying figure, also borrowed from our contemporary above referred to. It was grown by Mr. Baines, of Southgate who writes respecting it :—

“From the comparative scarcity of well-grown plants, *Nepenthes* have got the character of being difficult to grow. Such is really not the case ; the fact is, their requirements appear to be little understood. We generally find them stuck at the darkest end of the stove, smothered by other plants overhead, or heavily shaded, under the impression that they require it. The result is they become so weakened by such treatment, that the copious application of water essential to their existence cannot be absorbed by their roots, which rot as fast as the plants in their struggle for existence make them ; and they ultimately die



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NEPENTHES RAFFLESIANA.

outright, or never form pitchers freely, the absence of which latter, from a cultural point of view, renders them of no interest. Instead of placing them in the situations described, hang them up or elevate them in any way until the top of the plants is not more than 1 or 2 ft. from the glass; under the ridge is the best, as there they will get more light as well as the necessary air they require from the ridge ventilators. Shade with thin materials when the sun shines, but never when it does not. Use pots proportionately small as compared with the requirements of most other plants, and give liberal drainage. Soil: the best fibrous Orchid peat three-fourths, with one-fourth chopped sphagnum, sand, and crocks about the size of horse-beans. Water at the root once a day during the growing season, twice or three times a week during the season of rest. Syringe overhead in the evenings whilst the plants are making active growth, and keep them clear from insects. As to temperature, all they require is such as will grow Cucumbers all the year round. By following these simple directions, success is almost reduced to a certainty. In conclusion, I may say that, of all plants introduced for culture under glass, I know of none possessing more general interest."—T. BAINES, *The Gardens, Southgate House, N.*

BLIND CABBAGE PLANTS.

THIS may seem a very odd title. The expression is, however, applied to Cabbage plants when they have lost their hearts,—a malady the cause of which is uncertain. In some seasons blind Cabbages are scarcely heard of, but during the present season there has been a great outcry about them among gardeners and cottagers. So general, indeed, have these blind cabbages been, that in most gardens vegetables of the cabbage tribe have had to be planted afresh, and still in many cases the evil prevails. I have heard of the same complaint among Swedish turnips. Some persons ascribe the injury to a small "black insect," somewhat like the one which attacks young turnips, especially in dry weather; but it is more probable that the mischief is done by the larvæ of a small insect, which attacks the tender hearts of the plants in the seed-beds. They certainly do not perforate or eat the "seed-leaves," nor those of after-growth, as does the turnip-fly, which often devours the whole crop of turnips. It is not so in the case of plants of the cabbage tribe; these may be "blind," and yet appear to be all right, until we look closely into their hearts. I am not aware that any writer has noticed this subject; indeed, until this season I had given it but little attention, and therefore I am at a loss to prescribe a remedy. It may, however, be mentioned that most of the "blind plants" were among the early-sown ones, while the hearts of those in the late seed-beds were sound; perhaps by that time the larvæ had undergone their natural change, or what is more probable, they may have got past the lifetime of the insect which affected the others; or the chrysalids may pass the winter in the ground, ready to appear as perfect insects to renew the plague in spring. If so, deep trenching may destroy them; or it may be efficacious to sow the seed as late as possible, on

beds of fresh soil, away from that on which the cabbage tribe had grown ‘blind’ the previous season. I have understood that some persons regard this blindness as merely the effect of the rapid growth of the plants during the hot and moist weather; but unfortunately for this opinion, the plants were in this state before the hot period of several days set in, with the thermometer at from 80° to 84°. —J. WIGHTON, *Cossey Park*.

FRUIT CULTURE.—OCTOBER.

THE instructions given for the preceding month in the Out-door department will to a great extent serve for this. Continue to gather *Pears* and *Apples* as they become fit, and store away carefully all the fruit. Late *Pears* should be left on the trees as long as the weather continues fine. As a general rule, both *Pears* and *Apples* should be taken when the fruit parts freely from the spur on being gently lifted upwards. Gather *Quinces*, *Medlars*, *Filberts*, and *Walnuts*, when fit. The planting of fruit-trees of all kinds may be proceeded with as soon as the leaves begin falling, if the necessary preparations have been made for them. Do not forget that thorough drainage is the basis of good cultivation. Avoid deep planting. On strong soils with a retentive subsoil it is advisable to plant on hillocks raised a little above the surrounding surface, but on light soils with a porous subsoil it is better to plant the trees on a level with the surface. One great advantage of early planting is, that the roots being still active, and the heat in the ground considerable, the trees continue to make fresh roots, and are better prepared to meet the wants of the expanding buds in spring. Make fresh plantations of *Raspberries* and *Strawberries*.

IN-DOORS.—*Pine* plants that are swelling their fruit must have liberal supplies of water, and a warm moist atmosphere. Fire-heat will now be necessary to keep the temperature from 65° to 70° by night, and from 75° to 80° by day; air should be given freely in mild weather, always closing up early. The plants that are intended to be started in January and February ought now to have completed their growth and be allowed to rest; they should have little or no water, plenty of air, and a dry atmosphere, and the temperature at night should not be less than 60°. Shift any successional plants that require it, and avoid crowding them. If the fermenting material is not likely to give sufficient bottom-heat during the winter, it should be partially or entirely renewed; a bottom-heat of about 80° will carry them safely through the autumn and winter months. In fine weather give abundance of air in the forenoon, but always close up early. The early *Vinery* should now be started; give the inside borders a good soaking of water, and cover the outside borders with fermenting materials; very little fire-heat will be necessary for a few weeks, except in case of frost; syringe the Vines two or three times daily, and keep up a moist atmosphere. Houses containing ripe grapes must be kept cool and dry; and in wet weather a little fire-heat will be necessary to dry up the damp; cut off all laterals, and thin out the leaves where crowded, to admit air to the bunches. Prune the trees in the early

Peach house, and then put on the lights, but give plenty of air both day and night. Remove all the old ligatures and clean the trees of everything likely to harbour the eggs or larvæ of insects, then give them a dressing of the following mixture :—soft-soap, sulphur, clay, and tobacco-water, reduced to the consistency of paint with warm water ; when this is dry, the shoot should be neatly tied down to the trellis. Towards the end of the month, when the leaves are all off the trees in the late house, any pruning required should be done, and the lights put on before the bad weather sets in. Pinch all runners off *Strawberries* as they appear ; the plants will not require much water at present, as the forming and perfecting of the crowns is now the principal point, and for this dryness is essential. Maintain a steady heat to *Cucumbers* and *Melons*, and give air at every favourable opportunity.—M. SAUL, *Stourton*.

ON POTTING WINDOW PLANTS.

“WHEN are we to re-pot our plants?”—a very proper inquiry. As a rule, don’t re-pot them when they are showing their flower-buds, else possibly they will all fall off. Don’t repot them in the winter, when nature is having a snooze ; she is very near akin to humanity, and does not like her rest to be disturbed. As a general rule, the Spring-time is the best, when nature’s energies may be said to rouse into activity, then is she best prepared to repair all damages which occur in the operation. In the Spring-time—say in the month of April—if the pot in which a plant is growing is small in proportion to the size of the plant, and it evidently requires a larger pot, carefully turn the plant upside down, and tap the pot-edge gently on the table, and the ball of earth and roots will come out on the palm of your hand, a perfect representative in shape of the pot it was grown in. It may appear to be nearly all roots, but as the greater part of these will be dead, although here and there there will be young active roots just forming, use care. Remove the potsherds at the bottom, and in doing so make a note of what you see, namely, that these open fragments will be full of roots—old roots, it is true, and possibly dead by this time—but they have had their use, and learn therefrom that this open material has an important value ; and further that roots, however much they dislike the light, and consequently always grow earthward, like a little air, and the moist air that fills up the space between this material is just what they revel in. After having carefully dislodged the open material from the roots, and loosened the ball of earth by working gently with the fingers at the lower part of the ball, the plant will be ready for its new quarters. I presume, of course, that before you have proceeded thus far you have a pot somewhat larger ready for its reception ; and if not a new one, it should be well washed, quite as much for the benefit of the plant as for appearance’ sake. Don’t forget the lesson you learned about drainage : put some hard open material in the bottom of the pot, lay over it a bit of moss, or failing this, a few of the dead or decaying leaves of the plant ; these will prevent the soil filling up the crevices, and thus destroying the value of this

material. Next place the ball of roots in the centre of the new pot, having previously put sufficient soil in the bottom to raise the surface of the old ball to within a quarter of an inch of the top of the pot; then fill in the soil well round, shake it down, and when full press it firmly down with the thumbs, turning the pot round with the fingers during the operation. Don't be frightened of hurting the roots by the pressure, but do it vigorously, for if the soil be left loose the water will run through as through a sieve. When this process is completed the surface of the soil will be a level, rather less than half an inch below the top of the pot, thus leaving room for a water supply. Don't pile up the soil round the neck of the plant—a fault too often committed—such an arrangement naturally sends the water down the sides of the pot, when perhaps the interior of the mass of soil is thoroughly dry.

Though I have said that Spring is generally the best time for potting plants, mind I do not say it is always so. Take, for instance, a Geranium, which flowers early in Summer. When its flowering season is over it ought to be cut down, say to half its height, or even less. It ought then to be set out of doors in a shady place until it begins to form nice buds and small green leaves along its old branches; this it will do within a few weeks. After exhausted nature has begun thus to show her returning energies, the process of re-potting should be attended to; but in this case it is best to shake all the soil away from the roots, trimming off the long straggling ones with a sharp knife, re-potting in a smaller pot than that in which the plant previously grew. This small pot will get well filled with roots before Winter, and in Spring the plant should be transferred to a larger pot in which to bloom, the same process being repeated each succeeding Autumn and Spring. After potting, unless the fresh soil be in a wet condition—which it should not be—place your pots out of doors on a level place, and give them a good watering, so as to fairly penetrate the mass.

Supposing the accommodation for a plant in a window is limited as to size of pot, and you cannot arrange for a larger one, then, in lieu of re-potting as before described, you may fall back on the expedient of top-dressing. In doing this you should use a moderately sharp piece of wood—say a piece of old lath (mind not to use an old knife), and having carefully loosened the surface soil, say for an inch or more, avoiding any injury to the roots, remove it all and replace with fresh soil. As this operation will be performed only on those plants that have been grown for several years in the same pot, and which will necessarily have impoverished the original soil, it will be advisable to add some stimulant. Plants are not altogether total abstainers, and there are conditions in which a stimulant will be beneficial. In this matter, alike for yourself and your plant, let your motto be moderation, “too much of a good thing is good for nothing.” Possibly you will ask what stimulant you are to use. I will mention two or three which are most easily attainable. One you or your rosy-faced little lad may pick up in the street or on any roadway frequented by horses, if you get an early start of the street-sweeper. This, mixed with the compost which the

Window Garden Society will supply,* will be one of nature's stimulants. Another and one more lasting in character may be obtained by getting a bone or two, drying them well before the fire, over it, or in it—it matters not which—and with a hammer or even a flat-iron breaking the bone up into small pieces, as small as you can make them. Use a dessert or table spoonful of these, according to the size of the pot, to mix with your soil, and you have a storehouse of food that will last the plant for a year or two. Put what you have left over in a dry place, and it will do for the next time. A little charcoal broken small is also a good thing; not that it contains much nourishment in itself, but like a sponge, it absorbs any moisture near it. The charcoal also sucks and stores up all the bad gases in the atmosphere, and gives them out to the plant as the roots require them.—J. C. NIVEN (*abridged from a Tract issued by the Hull Window Gardening Society*).

ROSES AND ROSE-CULTURE.

CHAPTER XIII.—ON PROPAGATION.

BUDDING is an operation now very generally understood, but nevertheless a few remarks on the subject may not be altogether uninteresting. Budding is best done in July and August. If the weather be hot and sunny, morning and evening are the best periods of the day, both for the operation and the operator. Cloudy weather, although not absolutely necessary, is considered preferable to sunny, but then it does not always suit to wait for this or that particular time or state of the weather. The shoots from which the buds are about to be taken should be firm and ripe, and the buds or eyes dormant. Trim the leaves off, but do not remove the leaf-stalks. Let me presume that the operator is standing over the stock about to be budded, the wild shoot in his left hand, the budding-knife in his right hand. First draw the point of the knife along the wild shoot, making a cut about an inch in length, just deep enough to pass through the bark; this cut has been made horizontally, in the direction in which the shoot grows. A cross-cut at the upper or top end is now desirable, in order that the bud may be easily slipped beneath the bark. Now pass the handle of the knife along the horizontal line previously marked out with the point, slightly twisting the handle so as to raise the bark on either side. Next turn to the shoot containing the buds, and commence cutting about a quarter of an inch behind the bud; let the knife dip slightly as it passes under the bud, rising again immediately afterwards, and gradually passing outwards. The bud when cut from the shoot should be from one-half to three-quarters of an inch long. If the bud has been cut thin, it is a matter of indifference whether or not the wood be withdrawn; but under other circumstances, this is advisable. Separate the wood and bark by inserting the point of the knife at the lower end of the bud; hold the

* Mr. Niven, after pointing out the difficulties which town residents of the humbler class have in procuring suitable soil for plant culture, suggests that the societies which take interest in this subject should provide a supply for gratuitous distribution.

bud firmly between the finger and thumb of the left hand ; then, by a sudden movement of the knife, the wood may be jerked out without injuring the bud. This, it must be admitted, is rather a delicate operation, and requires both skill and practice ; in attempting it, the eye is often withdrawn with the wood, and the bud destroyed. The bud, once placed, may be bound up with cotton or bast, and left for about three weeks, when all will be firmly united, and the cotton or bast may be removed. No further attention is necessary till February, when the wild shoot may be shortened half its length, and cut to within an inch of the point of insertion a month later. About midsummer the wild shoot may be cut off close up to the bud.

GRAFTING is usually done in winter, and under glass. The Manetti, the dog-rose, and indeed any common roses, may be used as stocks. Whip-grafting, wedge-grafting, and crown-grafting seem alike successful, but the first of these is most commonly practised. It is important here that the scion or stranger-wood be of about the same thickness as the stock, so that the inner bark of the scion can be laid exactly upon or in contact with the inner bark of the stock. The two when placed in contact should be bound firmly together, as in budding. It is best that the stocks be potted some months before required for use, in order that they may have become established in the pots. The stocks should be placed in a close house or frame, with heat, a fortnight before grafting, that they may be a little in advance of the scion, so as to yield a supply of sap to the scion from the first. When the eyes on the scion have shot an inch or so, the ligature with which it has been bound to the stock may be loosened, and after a time wholly removed. As the plants advance in growth they may be *gradually* brought into contact with the open air.

CUTTINGS of Roses may be taken and rooted with success in spring, summer, and autumn ; and by cuttings we obtain plants on their own roots. Where forcing is resorted to, cuttings may be taken off the plants immediately that the flowering is over, and six or eight of them may be placed round a 48-sized pot, in sandy peat or loam, enriched by a mixture of leaf-mould or decayed manure. They should be set in a close frame or house with bottom-heat, and be kept moist by syringing. They will be rooted and ready for potting off in about three weeks from the time they are taken. Place them singly in small pots, keeping them in heat until the roots touch the sides of the pots, when they may be gradually hardened and transferred to larger pots. This is the easiest and the quickest way of obtaining Roses on their own roots, but according to my judgment, it is not the best way. Stronger and better-constituted plants are obtained by taking cuttings from out of doors early in autumn. Select well-ripened shoots, cutting them into lengths of about three inches, and insert them in a sandy soil in a shady and sheltered situation, or under hand-glasses out of doors. Here let them remain for a year, when such as grow will have become good-sized, well-rooted plants, ready for removal to any part of the garden.

LAYERING is a very certain method of obtaining Roses on their own roots.

Partially-ripened shoots may be tongued, and laid in the earth or in pots, in sandy soil, about midsummer, and will become sufficiently rooted to be separated and planted out by the autumn or spring, according to the soil, situation, and season.

The propagation of Roses by seed will be treated of in the next chapter.—
WILLIAM PAUL, *Paul's Nurseries, Waltham Cross, N.*

THE "POMOLOGIST" SELECTIONS OF FRUIT.

AMONGST the many comments I have heard in reference to the selections of Fruit-trees which have lately been given in the FLORIST AND POMOLOGIST, there is one which I am desirous of referring to here. One of our oldest and most esteemed gardeners, referring to the *Chaumontel* Pear, made the remark that "it could not from its inconstancy be accredited a prominent place in our collections." Now what are the facts? In this year of grace 1872, when such a dearth of Pears generally exists, the *Chaumontel* trees here bend beneath their loads of fruit, and present a strong contrast with most other sorts. This is a merit which should place all secondary considerations on one side. I cannot, however, see any objection to a pear which ripens between November and March, and is "buttery and melting, rich, sugary, and highly perfumed." The fact of the matter is that no pear is more impatient of pruning than the *Chaumontel*. Let it have head-room, even if it be but as a standard orchard-tree, and crops are certain to follow. The same remarks apply equally to *Beurré Rance*, a Pear far inferior to the *Chaumontel*, yet like it, fruitful as an ordinary standard, in this most inclement of inclement springs.

The *New Hawthornden Apple*, an advance on the older sort, being far finer, is much given to spot hereabout, which will always tell against it. I perceive that *Lord Suffield Apple* is extensively recommended. The variety I received under that name, and fruited on three or four occasions, proved an instant ripener, not capable of keeping a fortnight, soft to the touch, and rattle-pip'd—such, in fact, as I rejected lately, in making a selection of a couple of score of trees. Could I have possessed the true variety?

As against *Uvedale's St. Germain* (which is fruitful here this season as an orchard standard), *Catillac* bears cent. per cent. more, the fruit literally hanging in ropes like onions!—WILLIAM EARLEY, *Valentines*.

THALIA DEALBATA.

THE subject of our present illustration, *Thalia dealbata*, a native of South Carolina, is an elegant aquatic plant, of a half-hardy character, remarkable for its tall stems, 6 to 8 ft. high, which spring from a tuberous rhizome, and bear fine broad ovate-lanceolate stalked leaves, which are covered with a powdery bloom like that on the surface of a plum. The flowers are blue and purple, disposed in graceful panicles at the end of the stems, and together with the glaucous leaves, render it a fine object for cultivation where tallish and

tufted water-plants are admissible. The general habit is well shown in the annexed figure from M. Alphand's *Les Promenades de Paris*.

The plant, which is worthy of introduction to any out-door aquarium, is of easy culture, requiring simply to be potted or planted in good rich soil and the



THALIA DEALBATA.

roots sunk under water. If sunk to the depth of two or three feet, it is capable of enduring our winters, and flowers beautifully during the summer months. Messrs. Vilmorin remark:—"It is one of the most beautiful aquatic plants we have for the decoration of rivers, basins, reservoirs, &c., making the most vigor-

ous growth in warm and sheltered situations. It flowers from July to October ; and is multiplied in the spring by division of the rhizomes, the divided portions being put into pots kept in water. The *Thalia* resists the cold of our climate, provided it be placed in a deep enough basin, and that its rhizomes are below the limit of congelment. In some situations it might be preferable to cultivate it in pots or in tubs pierced with holes, these vessels being immersed in summer, and in winter put away in a frame or cave, sheltered from cold, where they can be kept almost dry ; or they may be placed in the greenhouse tanks, where they would continue to grow. In the spring they may be replaced in the open basins or lakes, either at the edges or in the middle, being sustained on tripods, if the water is too deep. The best plan, however, in most cases is to plant them in good soil, in the shallower parts near the margin, a south exposure being preferable, and where there is only from 16 in. to 20 in. depth of water. The *Thalia* is, moreover, one of the plants most worthy of recommendation for ornamenting tanks in cold and temperate greenhouses."—T. M.

KITCHEN GARDENING FOR OCTOBER.

ONE of the principal matters requiring attention here during the present month is the lifting and storing of the root-crops. More than ordinary care will be necessary this year to preserve the few sound *Potatos* that are left ; the disease has not been so virulent for some years past as it has been this season. Take advantage of dry weather towards the end of the month, to get up and store away *Carrots*, *Parsnips*, *Beet*, *Salsafy*, *Scorzoner*a, &c. Continue to earth up *Celery* when dry. As *Endive* and *Lettuce* fit for use will not bear much frost, they should be lifted and planted thickly in a frame or cold pit, and while in fine weather they should have full exposure, in wet weather the lights should remain on, with air back and front. Continue to tie up late *Endive* to blanch for succession. Plant out large breadths of hardy *Lettuces* to stand through the winter on warm borders, or at the foot of south walls, if sufficient were not planted out last month ; and keep them well dusted with quick-lime, otherwise, if the weather be open, slugs will make sad destruction among them. Examine the *Cabbages* planted out last month, and if there be any failures among them fill them up at once, that the plants may get well established before bad weather sets in. *Cauliflowers* sown in August should now be planted under hand-glasses, putting five plants under each hand-light ; and if not already done, a large quantity should be pricked out into cold frames about four inches apart, for transplanting into the open ground in March. *Spinach* should now be well thinned out, weeded, and the surface of the soil stirred. Take advantage of fine dry weather to stir the soil between the *Winter Crops*. Remove the leaves, as they decay, off *Rhubarb* and *Seakale* for early forcing. Towards the end of the month, when the stalks of *Asparagus* become withered, they should be cleared away ; then draw a portion of the soil into the alleys, give the beds a good dressing of rich manure, and cover with the soil that has been drawn into the alleys.

Remove all crops of whatever kind that have done bearing, and clear, manure, and dig, trench, or throw up the ground into ridges to receive the benefits derived from exposure to sun, air, and frost. The frequent heavy rains have made it very difficult to keep down weeds; keep the hoe constantly going in dry weather, and dig and dress all borders. Sweep and roll walks, and endeavour to keep up a neat appearance.—M. SAUL, *Stourton*.

OUR HARDY FRUIT CROPS.

THE year 1872 will not easily be forgotten by gardeners, from its having dealt a severe blow at our Fruit crops. One cause of failure was the mildness of the winter and the early part of the succeeding spring, which brought on vegetation prematurely, subjecting it at a later period to the destroying influence of cold, drenching rain, and occasionally severe frost. We had not to complain of a deficiency of blossom, but the blossom was, to a considerable extent, feeble, without much substance, and with the fructifying organs often absent. Such results may be anticipated in 1873, owing to the immatured state of the wood. Still a little margin is left which will do something for us by way of redemption, should we have a considerable amount of atmospheric aridity, and even a moderate degree of solar heat, during the latter part of September and the two first weeks in October. But however favourable, we must not expect autumn to make up for the drawbacks of the summer, for, as a rule, the intensifying of the young wood ought to accompany the different progressive deposits of the tissue.

Our Peach trees were unprotected, and as a consequence the crop failed, and what was more serious, many of our trees were severely injured. One disaster is generally succeeded by another, for no sooner had they escaped the biting cold, than they were attacked by a legion of black aphids, which would have soon destroyed every leaf had they not been hunted up almost daily, and the trees syringed with Gishurst compound—a cheap and most effectual remedy. Whenever we find an assemblage of ants we may be certain that these black pests are lurking somewhere. I do not suppose that ants do any great damage to the trees, but they industriously carry their black friends from place to place, and so assist in their distribution. Apricots, like our peaches, were a complete failure, although protected by a glass coping 22 in. wide, and covered by three plies of small-mesh netting suspended at two feet from the wall.

Apples, too, are nearly, if not a complete failure. We have not only to lament the loss of our crop, but in many cases the trees have suffered severely, the foliage having the appearance of being scorched. In a three-acre orchard our crop will not exceed four or five bushels, confined to the following varieties:—*Keswick Codlin*, a full crop; *Manks Codlin* and *Alfriston*, half a crop, small and much spotted, scarcely of any use; *Cellini*, a heavy crop, full-sized, clean-skinned, excellent; *Reinette du Canada* and *King of the Pippins*, a moderate crop. Dessert varieties are a complete failure.

Our Pear crop is by no means satisfactory. Trained on a south wall, *Beurré Sterckmans* has yielded half a crop, full-sized and clean-skinned; *St. Germain*, only a few stragglers; *Ne Plus Meuris*, a fourth of a crop, small, badly spotted, scarcely of any use; the same may be said of *Bergamotte d'Esperen*; *Chau-montel*, nearly a failure; *Beurré Rance*, very light crop; *L'Inconnue*, heavy crop; *Beurré Diel*, heavy crop, full-sized, excellent. Standard Pears are equally, if not more unsatisfactory; *Ne Plus Meuris* gives a heavy crop, very small, badly spotted, useless; so with *Easter Beurré* and *Glou Morceau*; *Thompson's*, a heavy crop, full-sized, excellent; and the same may be said of *Beurré d'Amanlis*, *Zéphirin Grégoire*, *Louise d'Orléans*, and *Beurré Goubault*; *Seckle*, a very heavy crop, small, much spotted, and deformed; also *Bergamotte d'Esperen*; *Beurré Léon le Clerc*, half a crop, full-sized, excellent; *Beurré Clairgeau*, medium crop, full-sized, clear-skinned; *Beurré d'Aremberg*, a full crop, small, much spotted, useless; *Winter Nelis*, half a crop, small, and spotted; *Beurré Diel*, a full crop, small, useless; *Broompark*, a heavy crop, full-sized, excellent; the same may be said of *Bon Chrétien*, *Knight's Monarch*, *Beurré Duhaume*, and *Alexandre Lambré*. Without exception, our Stewing varieties, which consist of the following kinds, have cropped heavily:—*Catillac*, *Black Pear of Worcester*, *Bellissime d'Hiver*, *Léon le Clerc*, and *Uvedale's St. Germain*.

Standard Cherries have been a total failure, and, except in the case of the *Morello*, which has cropped heavily, those kinds trained against an east wall, comprising *Bigarreau de Hollande*, *Florence*, *Bigarreau Jaboulay*, *Bigarreau Esperen*, and *Black Tartarian*, have not yielded more than a third part of a crop. Standard Plums and Damsons are a failure. Trained on a south-west aspect, *Quetsche St. Martin* gives half a crop; *Reine Claude d'Octobre*, a mere sprinkling; *Coe's Golden Drop*, half a crop; *Jefferson*, a full crop; *Impériale de Milan*, heavy crop; *Green Gage*, a mere sprinkling; *Reine Claude de Bavay*, half a crop.

Raspberries have been a good crop. Strawberries flowered abundantly, but set badly, owing to all but incessant rain. Black Currants have been a failure; Red Currants half a crop; Gooseberries abundant; Figs, only a few straggling fruits.—ALEXANDER CRAMB, *Tortworth*.

DRACÆNA MOOREANA.

THIS fine variety of *Dracæna*, which was named by Messrs. Veitch and Sons in compliment to the Director of the Sydney Botanic Garden, is one of the many important discoveries of the late Mr. J. G. Veitch, by whom it was introduced to this country. It was met with by him in the South Sea Islands, and proves to resemble *D. Cooperi* in habit, though it is distinct in its colouring, and larger in the size of its leaves. The figure gives a good idea of the aspect of a young plant.

The Messrs. Veitch describe it as a noble plant, with the leaves two to three feet in length, four inches in width, and prettily undulated, while the habit is compact, rendering it peculiarly adapted for decoration and exhibition purposes.

The leaves are of a glossy bronze hue, the midrib as well as the base of the leaf-stalk being of a bright reddish crimson. It is one of a series of forms of the *Dracæna* related to *D. terminalis*, which are most useful plants for orna-



DRACÆNA MOOREANA.

mental in-door gardening, and present no difficulty as regards their cultivation, the main features of which are quick development in a close moist stove-heat, to secure a good head of well-coloured leaves, and then to be hardened off for conservatory decoration.—T. M.

THE LAWTON AMERICAN BLACKBERRY.

FOR the last two years I have grown great crops of this excellent variety of Blackberry, and find it to make a capital preserve, when mixed with a few Apples to take off the sweetness. Wet seasons like the present seem to suit it best, for the bushes are loaded with fruit of a far larger and firmer consistence in flesh, and of a better flavour, than the common English Blackberry. I believe there are many varieties of American Blackberries, but the *Lawton* is the only one I have yet cultivated. I grow the plants of it in rows, like Raspberries, selecting two or three of the strongest shoots made in the summer, and after cutting away the fruiting-canes when they have done bearing in the autumn, the young shoots are tied up to stakes placed in a slanting position, like Raspberry-stakes. The stakes, however, must be longer than for Raspberries, for this Blackberry is a very strong, rampant grower, like many of the English sorts, and the more room it has the larger will be the crop. The soil it does well on here is very strong, with a clay subsoil, but I should think any soil would suit the plants, if they were well watered in dry summers during the flowering time. There being a great paucity of fruit this year for the black-birds and thrushes, I expected they would have commenced their raids upon this Blackberry as soon as it was ripe, but they seem to let it alone, and confine their attention to the rows of autumn-fruiting Raspberries growing in the same quarter of the Kitchen-garden.

The first year I fruited this Blackberry I saved some of the fruit for seed; and having raised some young plants, I have distributed and planted them in some of the hedge-rows and plantations about, so that they will very likely multiply and replenish the Blackberry-pickers' baskets with their fruit. The *Lawton Blackberry* is very distinct in its foliage from ours, its leaves being more lacinated, and of a deeper green colour, and keeping nearly so all through the winter.—
WILLIAM TILLERY, *Welbeck*.

FLOWER-GARDEN MANAGEMENT.—OCTOBER.

UNTIL a night's frost makes all desolate, no pains should be spared to keep everything in the best possible order. The frequent heavy rains have made sad work with flowers, and destroyed to a great extent the show of bloom for this season. Attend to the timely removal of decaying flowers and leaves, to the trimming and regulating of the straggling growths, and to the sweeping and rolling of the walks. Look carefully over the stock of cuttings, to see that a sufficiency of each kind has been put in; and lose no time in getting in cuttings of anything of which the stock appears short. Cuttings of *Calceolarias* root with great certainty in a cold frame at this season. Any plants intended to be saved during the winter should be lifted and potted before they are injured by the frost; and if they can have a little bottom-heat for a few weeks until they make fresh roots, they will keep better through the winter. Lift *Dahlia* roots before they get injured by the frost, and dry and store away. As soon as the

frost destroys the beauty of the bedding plants, clear the whole away, dig the beds deeply, and plant all kinds of hardy bulbs, as *Crocuses*, *Snowdrops*, *Tulips*, *Narcissus*, *Hyacinths*, *Fritillarias*, *Aconites*, &c., also *Pinks*, *Pansies*, *Primulas*, *Polyanthuses*, *Alyssums*, *Drabas*, *Iberis*, &c., from the reserve garden, for early flowering in spring.

IN-DOORS.—No time should now be lost in housing any plants that may be still out of doors. In arranging the plants, the more tender kinds should be placed at the warmest part of the house, and the more hardy ones at the coolest part. All plants set with bloom should have the more lightsome places. Thorough cleanliness, with abundance of air, and water when necessary, are the principal matters that at present demand attention. All soft-wooded plants, as *Fuchsias*, *Zonal Pelargoniums*, *Salvias*, &c., that have been grown for autumn display should now be in great beauty, and should be carefully attended to; give them abundance of air, but be careful to guard against strong winds. Pick off all decaying leaves and flowers and attend to the watering. Prune back *Fuchsias* past flowering, and pot off rooted cuttings. Attend well to show *Pelargoniums* for spring flowering; shift any that may require it, and tie out the shoots; fumigate occasionally to keep down green-fly. Some of the stronger seedling *Cinerarias* will now be throwing up their flower-stems; these, if put into a little heat, will soon be in flower, and will be useful during the autumn. Specimen plants for spring flowering must be carefully attended to. Shift any that may require it, and tie out the leaves, to allow the air to circulate freely through the centre of the plants; water when necessary. Attend to *Calceolarias*, *Chinese Primroses*, &c., and pot bulbs for early forcing immediately, if not already done. Give *Chrysanthemums* a dose of liquid manure two or three times a week.—M. SAUL, *Stourton*.

PICTURES OF PALM-TREES.

CHAMÆROPS HUMILIS ELEGANS.

WE are indebted to Messrs. E. G. Henderson and Son, for the accompanying figure of a very beautiful form of Fan Palm, belonging to a genus which is well known and deservedly popular in our gardens. *Chamærops* is interesting as furnishing the most northerly of the few palms indigenous to Europe, *C. humilis* itself being found as far north as Nice. The plant varies considerably in habit and character, sometimes attaining the height of 20 ft., with a straight clear columnar stem, at other times not exceeding 3 ft. to 4 ft. in height, producing a number of suckers from the base, so as to acquire a bushy character. The leaves are divided for about one-third of their length into stiff narrow folded segments, and are supported by longish petioles, which are armed at the edge with stout spines.

The present variety, which has probably been selected in gardens, is more slender and elegant than the type, but possesses the same general character and aspect. They are all cold-greenhouse plants, and one, *C. Fortunei*, is hardy

enough to brave our winter in very favourable situations. Mr. Williams recommends that they should be potted in rich strong loam, mixed with a small proportion of sand and vegetable mould. The pots are to be well drained, since they require to be liberally watered in the summer season. Increase is effected



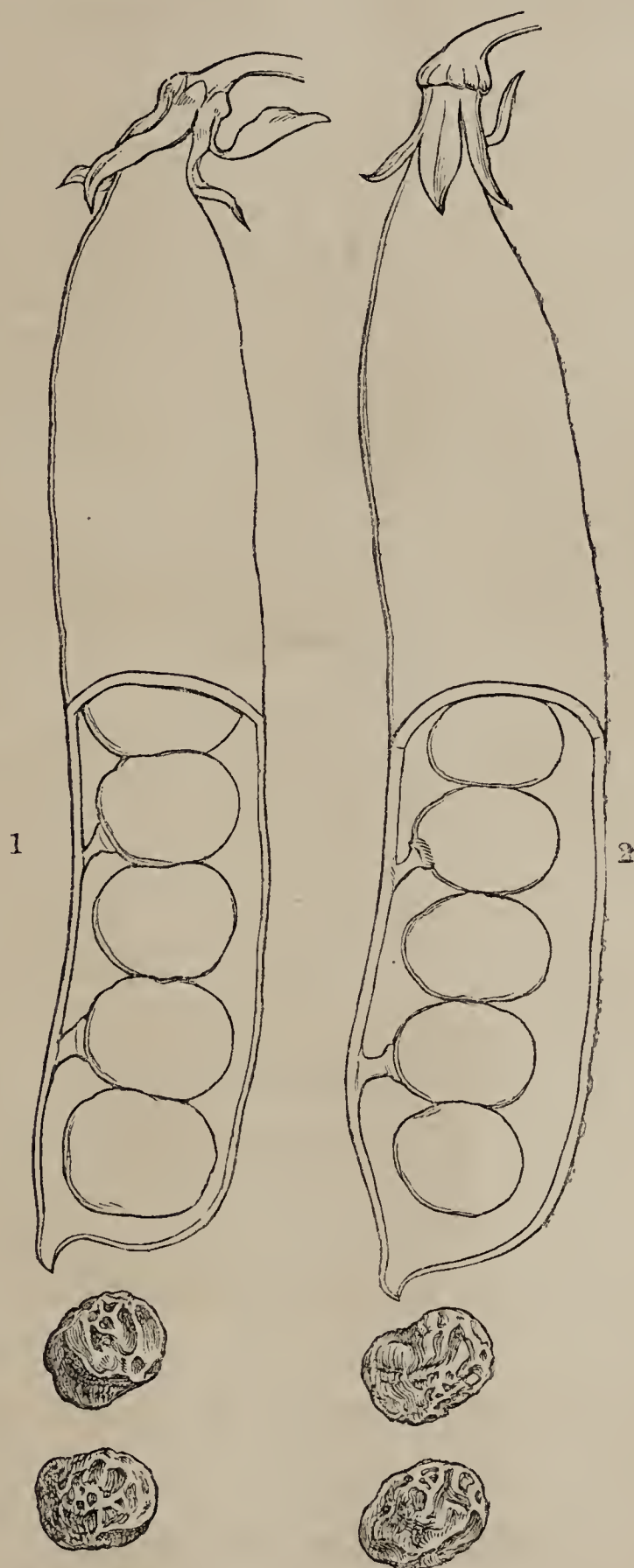
CHAMÆROPS HUMILIS ELEGANS.

by seeds, which are often obtainable, and also by separating the suckers from the parent stock.—T. M.

NEW PEAS OF 1872.

IN continuation of our notice of Peas certificated by the Fruit Committee of the Royal Horticultural Society at their trials in the Gardens, Chiswick, we now give figures of two other varieties specially worthy of the honour conferred upon them—this time not from the indefatigable Laxton, but from two distinct sources.

No. 1, *G. F. Wilson*, is a finely selected variety—received from Messrs. J. Carter and Co., of Holborn—of the Veitch's Perfection type, earlier than it by seven days. Pods also larger, containing from 6 to 8 very large Peas. Plant



1. G. F. WILSON.

2. JAMES'S PROLIFIC.

robust, about 4 feet in height, producing from 10 to 12 large pods, generally in pairs. Dried seed, light green and white. A really good Pea.

No. 2, *James's Prolific*, also a selected variety, from Mr. James, the Redlees, Isleworth, is a white wrinkled marrow. Pods long, very broad, well filled, very

slightly curved, of a light glaucous green colour, containing from 6 to 9 finely flavoured Peas. Plant robust, about 3 feet in height, producing from 10 to 12 pods, generally in pairs. Dried seed, white and wrinkled. Wonderfully prolific and early. A grand and first-class pea of universal excellence.—A. F. B.

GARDEN GOSSIP.

IN a recent letter to the *Gardeners' Chronicle* Mr. Bréhaut, writing of *Early Peaches*, observes:—"Some half-a-dozen years ago we used to watch the growth of that fine fruit, Early York, as the real staple of early Peaches. Now Early Rivers, Early Beatrice, and Early Louise are about three weeks in advance. This constitutes an appreciable gain to the orchard-house owner, for it is rather to these very early Peaches than to mid-season and less delicate kinds that our ideas at present are turned." He adds:—"Four years of trial under many forms of training and exposition have convinced me that the Early Rivers Peach is the best for orchard-houses as a very early fruit. It is quite as early here as any other, and has the great merit, especially in the case of early Peaches, of being always of a good size, colour, and flavour. It is of somewhat delicate constitution, however, and apt to be assailed by earwigs and wood-lice near the base, its tender skin and tempting juice, joined to a certain weakness of stone, making it a desirable prey. It should never be grown in any gloomy corner of the house, as it requires every ray of the oblique spring sun, and well deserves such exposition. This season, in my orchard-house, which is an unheated lean-to, Early Rivers Peach actually ripened on June 10, being the earliest Peach I have ever, in 17 years' experience, had to record.

— THE raising of *Shallots from Seeds* seems to be coming more and more common. Mr. C. J. Perry, amongst others, adopts the practice. He prefers to sow the seed early in March, in drills, thin enough not to require thinning, as they root so deeply that they are not easily pulled out. The plants as they grow soon stool out, and, if a dry summer, good waterings should be applied. The ground is dug and manured the same as for Onions. A selection of the largest and most matured roots is made for planting in spring for seeding, and if any of these do not throw seed they are still valuable for the quantity of bulbs they produce. This method of growing Shallots is by far the best for a large supply, and is the plan adopted in Jersey and Guernsey for procuring the enormous quantities sent every year to Covent Garden Market.

— ONE of the most promising suggestions we have heard made, as to the best mode of *Battling with the Potato Disease*, is to grow early varieties only, and to grow two crops annually. A crop of some good early variety may be got off the ground before the period when the disease becomes so destructive; and as the plant is little liable to attack in the early stages of growth, there will be time, at least in good seasons, to secure a second crop in the autumn, during which season the tubers do not appear to suffer, if not previously affected.

— A Sport from the *Gloire de Dijon Rose* has been obtained by Mr. A. S. Kemp, in which the flowers are all of a rosy-pink colour. In former years the colour has been of the usual tint. The plant was struck four years ago, and is growing on its own roots in ordinary garden soil. This is no doubt a case of reversion, and if it can be perpetuated the sport will be highly prized.

— ONE of the foremost places amongst golden-leaved Conifers must be accorded to Mr. Maurice Young's *Juniperus chinensis aurea*. The Chinese Juniper is well known as one of the hardiest and handsomest of coniferous shrubs, and when we state that the novelty just referred to is the exact counterpart of its parent in all but its colour, and that that colour is equal at least in richness of hue to any other golden Conifer hitherto known, but little further praise of it is needed. We may, however, add,

from a recent personal inspection of the stock, that it is thoroughly constant; not a plant, large or small, shows the least tendency to run back. There is, as we have said, nothing whatever but the colour to distinguish this from the type form of *Juniperus chinensis*. The original plant, which stands about 12 feet high, and the upper half of which is a mass of gleaming golden spray, is a conspicuous object from the high road in passing the Milford Nursery. The golden portion originated in a sport of one of the leading shoots, and now forms the entire apex of the plant, the lower half being of the ordinary green form. The colouration is not variegation strictly so called—not a sprinkling of yellow twigs or yellow leaves over portions of the spray, but the whole plant is suffused with it as if it had been bathed in gold, and this colour becomes the more intense the more fully and freely the plant is exposed to the light and the sunshine. Our notes indicate that the propagated plants take on a close pyramidal habit, and have, moreover, the twofold character of foliage which is seen in the parent, and that the colour on the more prominent portions of the plants is as bright as the tint of a golden Holly. Taking these various points into account, and coupling with them the free-growing hardy character of the plant, there is no exaggeration in pronouncing this novelty to be one of the best and most desirable of ornamental Conifers.

— THE *Great International Fruit and Flower Show* of the Glasgow and West of Scotland Horticultural Society, took place on September 11th and following days. The display of Fruit was a remarkably fine one, the exhibits being good and abundant, without being extraordinary, except in the case of Grapes, of which there was produced a cluster of the Syrian, the largest and heaviest example on record in modern times. The Vegetable department was thoroughly well represented. Plants, as might have been expected at this season of the year, were mostly represented by what are called foliage plants, very few flowering plants fit for exhibition remaining in blossom. Of Cut Flowers, such as Dahlias, Hollyhocks, and Gladioli, the display was satisfactory. Altogether nothing but fine weather was wanting to its complete success, but the elements proved most inauspicious. The competition in Grapes was the special feature of the show. In the class for eight varieties, one bunch of each, there were three very excellent exhibitions. Mr. J. Hunter, gardener to the Earl of Durham, Lambton Castle, Durham, who staged the largest bunches, although not superior in finish to the others, being awarded the 1st prize. His collection consisted of Black Alicante, Aramon or Burchardt's Prince, Raisin de Calabre, Black Hamburgh, Muscat of Alexandria, large and fine Golden Champion, splendid examples of Muscat Trov  ren, and Barbarossa (Gros Guillaume). Mr. Fowler, of Castle Kennedy, was 2nd with a small but splendidly finished bunch of Muscat, good Muscat Hamburgh, Golden Champion, Black Hamburgh, Lady Downe's, and very fine Trebbiano, Alicante, and Barbarossa. Mr. Johnston, of Glamis, took the 3rd place with perhaps the best examples of Golden Champion that have ever been seen, splendid Muscat of Alexandria, and Buckland Sweet-water, ripened to such a degree that it had assumed almost a white hue, which did not improve its appearance. The 1st prize for four varieties of Muscat was worthily won by Mr. Fowler, of Castle Kennedy, who also obtained the same honours for the single bunch of Muscat. The bunch, although not equal in size to others, was well finished. In the general classes for Black Grapes, Mr. Fowler was again 1st for the two bunches of Black Hamburgh. Good examples of Muscat Hamburgh were shown, the 1st prize going to Mr. Fowler, who was also 1st for Lady Downe's, his samples being very large in berry for that variety. For the best single bunch of Black Hamburgh the 1st prize was awarded to Mr. T. Boyd, Oaklea, Galashiels. The prize for the best-flavoured Grapes was awarded to an example of the Muscat of Alexandria, in opposition to Duchess of Buccleuch and others. The prize for the Grape possessing the best bloom was awarded to an example of Barbarossa (Gros Guillaume), shown under the name of Pennington Hall Hambro'; the bloom on this was very perfect. For the heaviest bunch of a White Grape there were two extraordinary exhibits. Mr. Fowler, of Castle Kennedy, staged one of White Syrian weighing 14 lb. 11 oz., but this was far outweighed by the example of the same variety from Mr. Dickson, gardener to J. Jardine, Esq., Arkleton, Langholm, who exhibited the largest bunch that has of late years been recorded, namely, 19 lb. 5 oz., measuring over 2 ft. in length and diameter. For the best new Grape the 1st award was made to Mr. Thomson, of the Tweedside Vineyards, Galashiels, for splendid examples of the Duke of Buccleuch, which, now that they have become more ripe, were of a pretty amber hue; this is a great and valuable acquisition.

— THE *Berkheya (Stob  a) purpurea* is one of the most beautiful of herbaceous plants. It has recently flowered in the garden of Mr. Wilson Saunders. The plant is thistle-like in aspect as to stem and leaves, but the flower-heads, which measure 3 in. across, are more like those of a single Dahlia, and indeed remind

one of those of *D. imperialis*, the colour being pale lilac. It is a native of the Winterberg district of the Cape Colony, and appears to vary its nature and in the colour of flowers, from a deep violet or purple to pure white. Mr. Barker, to whom our English gardens are indebted for many treasures, speaks of the plant as growing "in the valley of the Winterberg in patches, many thousands close together, as if they had been planted in beds." It must probably be ranked as a biennial, and no doubt it would be better to raise the seed in a little heat, and plant out afterwards. This is unquestionably one of the very finest herbaceous plants grown.

— IN a recent work entitled "Air and Rain" is given a report by Mr. Rothwell on the *Capacity of Plants to resist Acid Fumes*, such as emanate from factories. The following are classed according to the effects produced on each :—

I. Fern, only in the summer; Scotch Firs, Spruce, and Larches, a little in winter; Clover, white and red, Trefoil, white and red, Rye-grass: all suffer damage during the winter to the roots; Poplars, Hawthorns, Potatos. II. Wheat receives some damage in winter, Oats in May; when in the grass state they soon receive damage; Barley, Mangels, common Turnips, Rhubarb. III. Laurels, British and Portugal; Aucubas, British and Portugal; Yews, British and Portugal; Holly, British and Portugal; Gorse, British and Portugal. These plants receive damage in winter, but more in summer. Old grass meadows and pasture receive much damage in the winter. IV. Ashes, Oaks, Hazels, Horso Chestnuts, Walnuts, Spanish Chestnuts, Sloe Thorn. V. Swedish Turnip and Cabbages, Damson and other fruit trees, Beech, Elm, Birch, Alder, Sycamores. Trees exposed to noxious vapours get bark-bound, and then cannot thrive, for they take damage in the winter, and the sap cannot flow when spring comes. Grass land takes as much damage in winter as in summer.

— THE following should be a useful hint to the growers of *Deodars* whose trees have not fulfilled their expectations :—"It always seemed to me," writes an India forest officer, "that it was hopeless to expect *Deodars* to come to any perfection planted, as they are usually at home, either isolated or only two or three in a clump. Perhaps there is nothing more astonishing in natural forestry than the enormous size which *Deodars* will attain when growing so close together that their trunks almost touch. In some of the Kulu forests, I have seen 20 to 30 huge trees, from 8 to 12 feet girth, and nearly 100 feet high, growing so close together that a man with outstretched arms could touch the trunks of any two of them, and with only a few small branches for their heads. It is the most extraordinary thing possible as to how they attain so great a height and size, growing so close together. But an isolated *Deodar* is rarely anything but squat and stunted, and never seems to come to perfection."

— THE *Araucaria imbricata* seems to be seeding freely this year. A fine example has been sent us from Conholt Park, the seat of Lady C. Wellesley; and one of the trees at Dropmore is ripening seed. In this case the female tree is 80 yards from the male, so that the wind must have carried the pollen. The latter was a cutting plant, taken from that at Kew, and bought from Mr. Knight for 10 guineas.

Obituary.

— MR. WILLIAM PRINGLE LAIRD, of the firm of W. P. Laird and Sinclair, nurserymen and seedsmen, Dundee, died at Fountainbrae, Monifieth, on the 14th inst. Mr. Laird was born at Balgone, in East Lothian, and in 1833 commenced business in Dundee, where his frankness of manner and careful attention to the interests of his customers, as well as the sound practical advice which he was always ready to impart to all that applied for it, soon secured for him a wide range of horticultural friends.

— M. GRIS, of the Botanical Department of the Jardin des Plantes, died recently, at the early age of 42. Latterly M. Gris has published much on systematic botany in association with M. Brongniart, and he has recently completed a very valuable monograph on the pith of plants, which is destined to take its place among the classical memoirs on vegetable anatomy and physiology.



BOUVARDIA VREELANDII.

WITH AN ILLUSTRATION.

WE have at p. 173 given a wood-cut representation of this remarkably useful decorative plant, introduced recently from the United States, under the name of *Bouvardia Vreelandii*, and which, as there stated, is a root-sport from *Bouvardia Hogarth*—the latter, a plant of hybrid origin, having been raised by the late Mr. Parsons, of Brighton, from *B. longiflora*, crossed by *B. leiantha*. It is from the latter parent no doubt that it has derived its remarkably free-flowering habit. This *B. Hogarth* is exactly intermediate between its parents, having flowers about half the size of the white-flowered *B. longiflora*, and having also the free and continuous-blooming habit of *B. leiantha*, while the colour of the flowers is intermediate. It is one of the many examples which show the tendency to sport—even from their roots—which is found in hybrids, since it has reverted to the white colour of one of its parents.

This chaste and lovely novelty, of which a portrait by Mr. Macfarlane is annexed, was raised by Mr. S. B. Vreeland, of Greenville, Hudson Co., N.J., and has proved to be one of the finest plants we have for winter decorations, and for bouquets. Its free-blooming habit is one of its most striking characteristics. Young plants turned out into the open ground about the end of May will yield a mass of bloom through the summer, and if taken up in the autumn will continue, in a warm greenhouse, to flower all through the winter. Out of doors the flowers are of a beautiful blush tint, as shown in fig. 1; while under glass it comes a pure white, as represented in fig. 2 of our plate.

The culture of this and other kindred *Bouvardias* is not generally well understood. Mr. Standish's experience points out that they all, whether grown in pots or planted in the open ground, require a very rich and light soil, and in any case should have in their compost at least one-third of well decomposed manure. In such a soil they grow freely and flower profusely. In winter, the plants should be grown in houses with a night temperature of about 50°.—T. M.

GOMPHOLOBIUM POLYMORPHUM.

THIS plant is now but seldom seen; nevertheless, if well grown, and trained loosely over small stakes, so that it can assume a bush-like outline, it is a very pretty and graceful-looking subject, its numerous pea-shaped blossoms and slender stems and foliage making it quite a contrast with most other greenhouse plants. To start with a young plant: if it is pot-bound, give it as small a shift as possible, but if this is not the case, better defer shifting until the end of February. For soil, select some good fibry peat and some nice yellow loam, and take about equal portions of each—the peat should be broken into small pieces, and the loam crumbled between the hands; to these ingredients add sharp silver-sand in sufficient quantity to make the whole porous enough to let water pass freely through. Place broken crocks in the pot to about a quarter

the depth of it, covering them over with a layer of rough, fibry peat. Pot moderately firm; let the stem of the plant be slightly elevated, so that when potting is finished the soil may slope a little from the stem of the plant to the side of the pot. A light, airy situation, near to the glass, but away from cold currents of air, is the best place in which to keep this plant. Watering must be well looked after, and the plant must not be allowed to get dry, as red-spider is certain to make its appearance if this is not well attended to; a slight damping with the syringe on the afternoons of bright days serves to keep this pest in check, and is also otherwise beneficial to the plant. Keep the slender shoots as they continue to grow trained over sticks, as above recommended; if left alone, they are liable to become entwined round each other, so that in freeing them they will be much injured, which will destroy much of the growth and blossom. Shading must not be resorted to in the cultivation of this *Gompholobium*, as it is necessary to have all the sun and light to harden the wood, to produce a fine bloom. When blooming is over, remove all the seed-pods, as the energies of the plant will then be thrown to the formation of wood; and this is a great advantage in the cultivation of this fragile species.—H. CHILMAN, *Somerley Gardens*.

FLOWER-GARDEN MANAGEMENT.—NOVEMBER.

THE instructions given last month will, to a great extent, serve for this. When the plants in the beds have become disfigured by frost, it is advisable to clear them away at once out of sight, and to fill up the beds with *Hardy Bulbs* and *Hardy Spring-flowers*. Plant *Roses* in ground that has been trenched and well enriched with good manure. The planting of *Ornamental Trees* and *Shrubs*, and alterations of all kinds, should be prosecuted with energy, as long as the weather continues mild and open; as much of this work as is possible should be got through in the autumn, and not be left over to the busy spring-time. As soon as the leaves are all down, the whole of the grounds should be thoroughly cleaned, all beds and borders neatly dug, and the walks swept and rolled.

IN-DOORS.—All *Plants* should ere this be housed, arranged, and in proper order for the coming winter. Take advantage of bad weather to tie and train any plants that may require it, and to clean plants that are filthy. Give abundance of air when the weather is mild and fair, avoiding cold draughts. Water very carefully, and always in the morning, as very little will be wanted, except for plants that are swelling their flower-buds. Unless severe frosts render it necessary, do not use much fire-heat at night. Occasionally during the month a little fire may be lighted in the morning to dry up the damp. Shift at once all *Pelargoniums* that require it into larger pots, taking care to drain properly; keep the plants as near the glass as possible; attend to the watering, and see that no plants are watered but those really in want of it. The night temperature should not fall below 45°. Attend carefully to the watering of *Cinerarias*, *Primulas*, &c. *Chrysanthemums* will now be in great beauty, and should be

carefully watered. *Bedding* and *other plants* in pots and frames should not at present have any more water than is absolutely necessary. Give them all the air possible; in wet weather tilt the lights alternately back and front, and see that they are well covered at night during frost.—M. SAUL, *Stourton*.



ANÆCTOCHILUS ORTGIESII.

EXAMPLES of this pretty dwarf variegated-leaved orchid were shown at the Birmingham Show of the Royal Horticultural Society, by Messrs. Carter and Co., who hold the stock of it. On this occasion it gained a first-class certificate, and another was awarded to it subsequently by the Royal Botanic Society. It is described as being mackerel-spotted. The leaves are narrowly ovate, of a light olive-green colour, silvery along the central portion, and blotched all over with largish spots or blotches of a kind of metallic purple. The plant has been collected by Roezl, in New Grenada. In its native habitat it grows at a high elevation, in shady positions, and hence it will probably succeed best in a cool stove or cool orchid house, where it may be grown in company with Selaginellas and Ferns.—T. M.

RASPBERRIES IN WET SEASONS.

I HAVE often been struck with the superiority in size and flavour of Raspberries grown in the North, as compared with the same varieties in the South or East. This excessively wet season has revealed the reason: the Raspberry loves moisture—though rain soon rots the fruit, the plants like it; whence, I believe, the unusual crops this season, where they were not thinned or destroyed by the May frosts. This suggests the wisdom of plying the hose or water-cart

more frequently and copiously among the Raspberry stools, should dry seasons again come round. Few fruits are so wholesome, scarcely any more popular than the Raspberry. In dry summers the fruiting season is far too short, but by the use of more water it may be much prolonged; and, thanks to Mr. Rivers, the autumnal-bearing Raspberries now almost equal in size and flavour the best summer varieties. The *October Red*, *October Yellow*, and *Large Orange*, are fine and free-bearing varieties; the *Black* is said to be almost equally good, but I confess to a prejudice against a black Raspberry.

It is a pity we do not get varieties similar to these late-bearing ones to come in earlier, since by their fruiting along the whole cane, they keep on bearing until cut down by the frost. Something may be done by cutting the canes down in the autumn, close to the ground, instead of in the spring as generally recommended. As to allowing these autumnal fruiters to bear with the others, it is a sheer waste and partial ruin to the crops. Cut away the old canes to the ground in autumn or the spring; thin the young shoots to from three to six to a stool, in May or June, and see that they are well supplied with manure-water, if the early autumn or late summer months prove dry; and then ropes of rich luscious fruit may be gathered from the beginning of October to the end of December, weather permitting. If Mr. Rivers, to whom we are indebted for so many fruits, would add to their number yet one more, and that a double-bearing Raspberry, equal to the *October Red* and *Yellow*, but beginning to fruit in August, that would indeed prove a rich boon to all growers and eaters of Raspberries.—
D. T. FISH, *Hardwicke*.

NEW PICOTEES.

HERE are, I think, but few persons who are not lovers of these most charming flowers. In fact, I may say they are everybody's favourites. Such a vast stride has recently been made in improving them, that I think I may venture to assert, that if a greater advance has been made in any one particular florist's flower more than in another, it is in the Picotee. During the last season some really superb varieties have been exhibited. These have been selected from many thousands of seedlings, nearly all of them the produce of 1868, when seed was saved in greater abundance than perhaps was ever known before.

I have here made a selection of the finest novelties in the various classes, and given full descriptions of their properties. As a proof of their merits it will be seen that many of them have been awarded First-class Certificates. The varieties generally are of an excellent habit, and they form, without doubt, the finest lot of Picotees ever raised :—

PRINCESS OF WALES* (*Fellowes*).—Very dark heavy red edge, fine large smooth petals, very pure white, and the marking very solid; fine large full flower, and very distinct. The finest flower in its class.

MRS. ALLCROFT* (*Turner*).—Light rose edge, fine large full flower, fine smooth petals, and perfectly free from spot or bar; extra fine.

MRS. STANDISH (*Fellowes*).—Heavy scarlet edge; a fine large full flower, smooth good large petals, and very distinct; extra fine.

ADA INGLETON* (*Norman*).—Medium bright purple edge, a fine large flower, good broad smooth petals, and a flower of good substance; very fine.

ALLIANCE (*Fellowes*).—A fine bright heavy purple edge, good broad smooth petals, and the white very pure; large and very fine.

JULIANA* (*Turner*).—Very bright scarlet edge, fine smooth petals, the marking very solid and very heavily edged; a fine-shaped flower, and moderately full; extra fine.

J. B. BRYANT* (*Ingram*).—Heavy red edge, fine large thick flower of great substance, fine broad smooth petals, and the white very pure; extra fine.

MRS. FORDHAM* (*Turner*).—Bright rose edge, fine large smooth petals of great substance, the flower very large and full without confusion. A grand flower, the finest of the medium-edged class.

MISS SMALL (*Fellowes*).—Heavy red edge, fine smooth petals, and the white very pure; quite distinct, and a good free habit; extra fine.

CHANTICLEER (*Fellowes*).—A good large thick flower, heavily edged with fine bright purple; very fine.

EDITH DOMBRAIN* (*Turner*).—A fine large flower, very heavily edged with bright rose; quite a distinct variety, and very beautiful; extra fine.

NORFOLK BEAUTY* (*Fellowes*).—Heavily edged with fine bright violet-purple, good broad smooth petals, and white very pure; a medium-sized flower; extra fine.

AUGUSTE (*Fellowes*).—Medium rose edge, fine broad smooth petals; large and very fine.

MRS. LITTLE (*Hooper*).—Light purple edge, very pure, fine smooth petals, and a very fine flower.

ETHEL* (*Fellowes*).—A medium bright rose-edged flower, fine large smooth petals, very pure white, a fine-shaped flower; extra fine.

MRS. KEYNES (*Fellowes*).—A good large full flower, medium red edge, fine smooth broad petals, and the white very pure; extra fine.

CHARLES WILLIAMS (*Norman*).—Heavily edged with bright scarlet, the marking very solid; a fine large bold variety; very fine.

MRS. HORNBY* (*Turner*).—Light red edge, a good large full flower, fine-shaped smooth petals, very pure, and beautifully edged; the finest flower in its class.

Those marked * have been awarded First-class Certificates at the Metropolitan meetings.—J. BALL, *Slough*.

WALL-FRUIT PRESERVERS.

AS was curtly remarked by Mr. Westland in his essay at Birmingham, the future of our fruit crops centres in the word PROTECTION, and certainly the experience of the present year intensifies that remark. Who has this year seen a *crop* of out-door Peaches? In my wanderings, which have not been limited, nor confined to any special locality, I have not been so fortunate, nor have I heard of more than one in the Midlands, and that was at Balderton, near Newark, where, under the protection of a glass coping, projecting 30 in. from the face of the wall, the proprietor has gathered the first crop of a many years' occupation. But this is not all, for the fruit has been so immeasurably superior to the driblets of former years, as to be quite another thing; and the fine foliage and wood give evidence that another year the fruit will be still better.

It was observable that in this instance, the vigour of the crop, and its precocity likewise, were in proportion to the amount of protection afforded. Thus the fruit was finer and earlier at the top of the trees than lower down, below the influence of the preserver; while where well protected it ripened a full fortnight earlier than where more fully exposed, thus lengthening the season of supply to

that extent. The protection of this 30-in. projection may be said to have extended 8 ft. to 9 ft. down a 12-ft. wall, so that it will be seen that those who speak of and recommend coping 1 ft. to 18 in. wide, do not half understand the subject they are treating. With a wall 10 ft. to 12 ft. high, a projection of less than 3 ft. may be considered comparatively useless, and for the full height, 4 ft. would be all the better. Indeed, to lay down a rule, I consider every yard of rise in the wall should have a foot of projection; and thus a 6-ft. wall would have 2 ft., a 9-ft. would have 3 ft., and a 12-ft. 4 ft.; and this must not be that length of glass sloping at an angle of 45° , but a *bond fide* projection of the length named, measured at a right angle from the wall. With such preservers I believe the growth of wall fruit would be reduced to a certainty, and that at a cost, considering the interest involved, almost nominal.

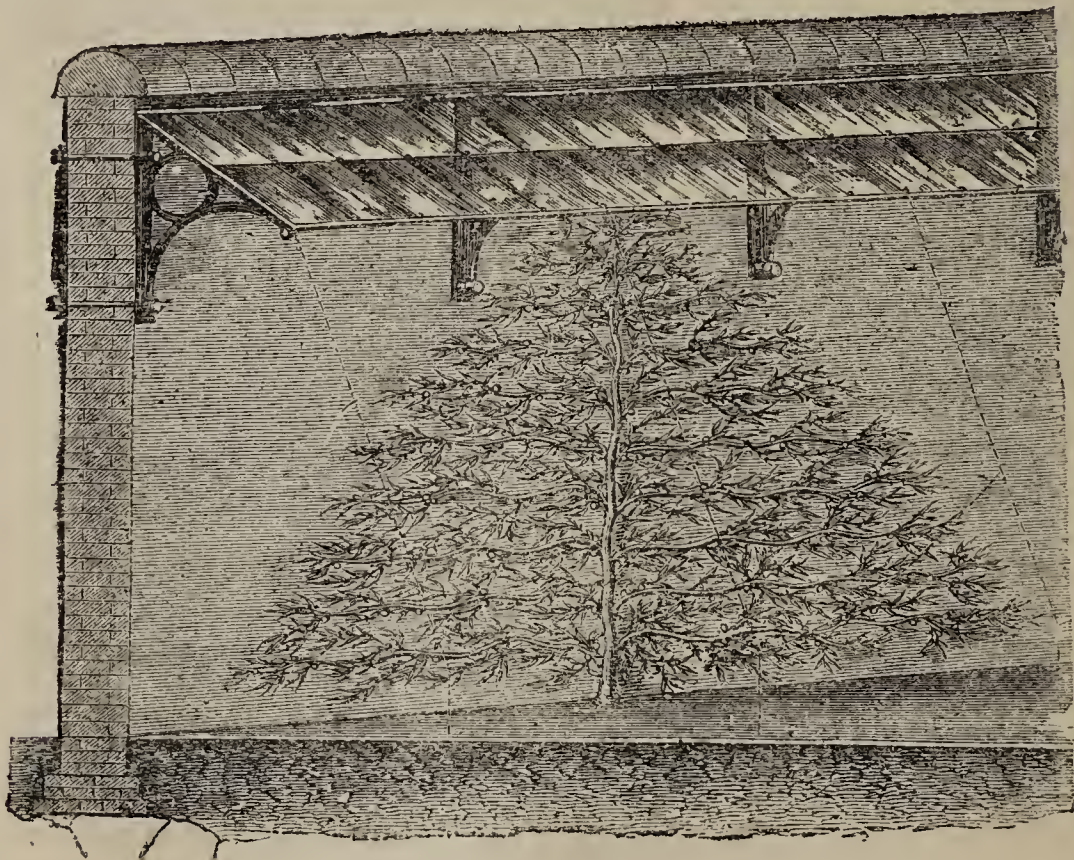


FIG. 1.—COPING OF GLASS AND IRON.

In speaking of preservers, I have no sympathy with the temporary or makeshift schemes now before the public. I believe them to be permanent institutions in the garden, and as such worthy of being erected in the best manner, not only for the sake of superior appearance, but also as in the end being the cheapest. Judged from that stand-point, we have nothing fit to compare with the Fruit Protectors of Mr. Ayres, for not only have they all the elements of strength and durability, but seen in a stretch of a hundred or more feet, they have a remarkably chaste and elegant appearance; indeed, they impart quite a finish to a well-kept garden. The simple Fruit Preserver is shown in fig. 1. This projects 3 ft. from the face of the wall, and is glazed with Hartley's Patent Rolled Plate Glass, in a single length, from back to front, the glass being held in position upon the patent principle. From the end of each bracket will be perceived a simple dotted line, and at the end of each of these lines a similar radiating one. These

brackets, though light in appearance, are of sufficient strength for a permanent building; and hence, if at any time it is wished to convert the Preserver into a

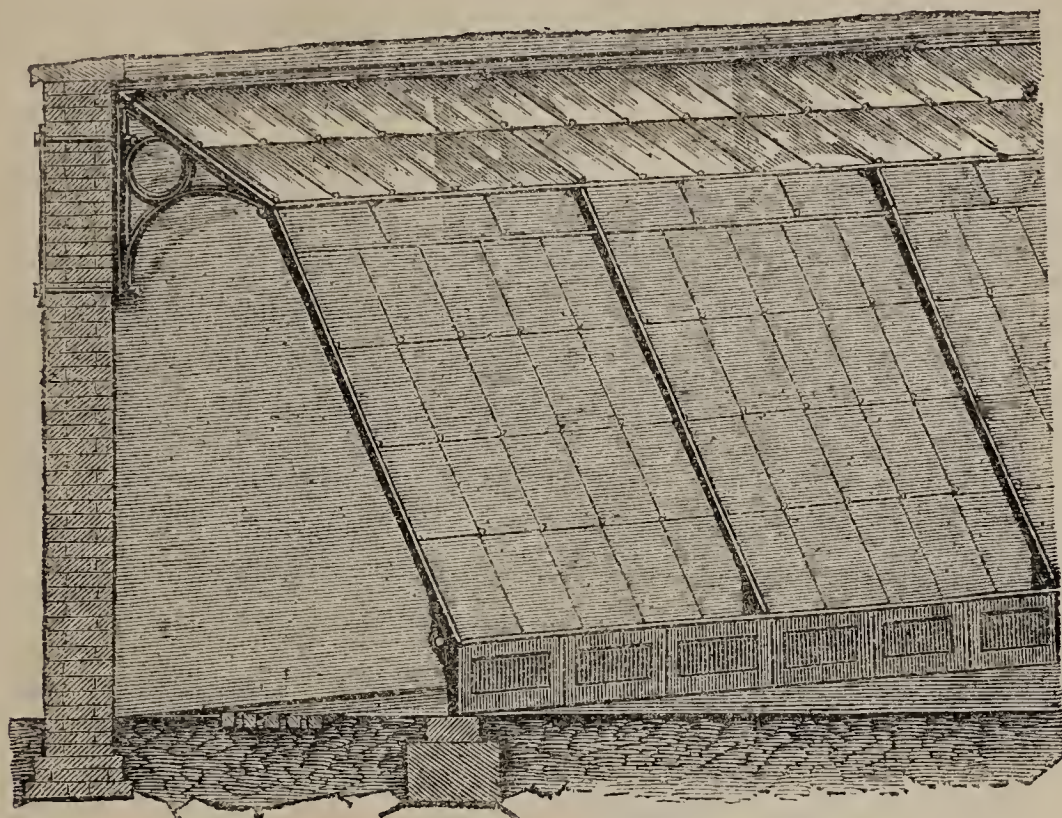


FIG. 2.—COPING CONVERTED INTO A FRUIT HOUSE.

Fruit-house, it is only to connect the universal joint and rafter to the bracket—preparations being made for it—and with a front standard of suitable height, a

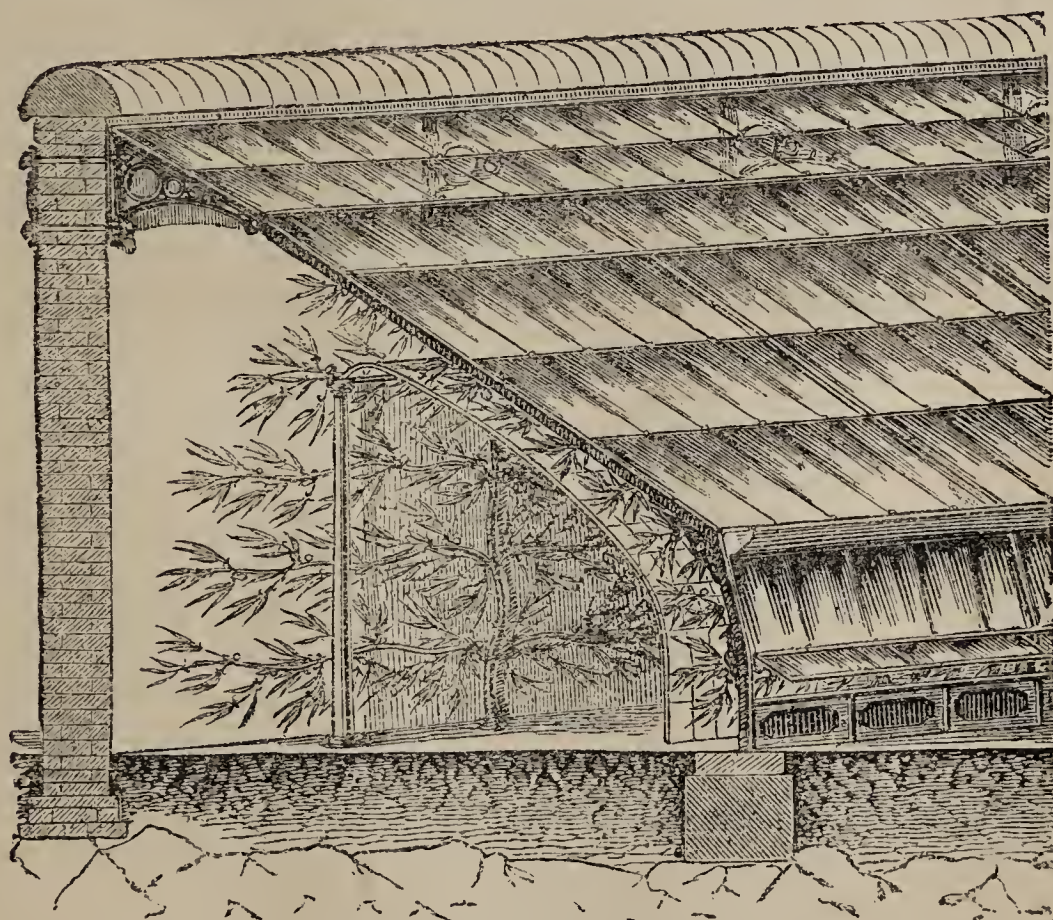


FIG. 3.—EXPANDING FRUIT HOUSE.

house of any width may be formed. This is ingenious, as well as economical, as you first erect your preserver, and then at any subsequent period you can add

the expanding house, without in any way disturbing the first arrangement. This to many will be a great convenience, as in planting young trees the expense of a house to cover them need not be incurred until such time as they come into a fruit-bearing state. The extent to which this system of protection is being adopted is something surprising, and before another spring miles of it will in all probability be in use, as, I believe, it is being prepared not by hundreds, but by thousands of feet.

Opinions vary as to whether the front of the preservers should have water-gutters or not. I think not, because except in very rare cases no more rain falls than is necessary for the use of the trees, and hence to carry it away would be a great mistake; but in cases where the rain-fall exceeds 25 in., especially upon heavy soils, I should, as a matter of course, take measures to regulate the supply, by carrying away the excess.

Another point in connection with fruit preservers may be noted, and that is the force of the wind as it sweeps across the garden and beats against the wall. I have for many years held the conviction that this cold and thirsty wind, beating against the tender blossoms, and swallowing up their moisture, does more harm than perpendicular frost. To prevent, or at any rate to check, this drain upon the resources of the plant, I have long made it a rule to grow a row of early peas, 5 ft. to 6 ft. in front of and parallel with the wall, and these thickly staked at the back with fir branches, formed a screen which broke the force of the wind, and to some extent supplied it with moisture. This management, even with ordinary protection, I always found advantageous, and no doubt it will be more so in connection with the fruit preservers. It is scarcely necessary to remark that these preservers are manufactured in connection with the patents taken out by Mr. Ayres, to whom I am indebted for the illustrations. Fig. 2 shows the addition, suggested by the dotted lines referred to above, merely as a glass case; while in fig. 3 the Preserver is converted into a permanent erection,—a Fruit-house of the very best description.—W. N., *Newark, Notts.*

STATICE PROFUSA.

THOUGH much cultivated in Scotland, this fine hybrid *Statice* is not so frequently seen in the hands of English cultivators as its merits deserve. Some fine plants have, however, lately made their appearance on the exhibition tables, so that we may look for it to gain admirers, as it becomes more familiar to the public eye. The plant is of hybrid origin, its parents being *S. puberula* and *S. Halfordii*, the latter a garden plant, less robust than *S. macrophylla*, but partaking of the character of that species, from which it appears to have originated. *S. profusa* is intermediate in size and habit between its parents, being larger in growth, and having longer leaves and taller stems than *puberula*, and being smaller than *Halfordii*, with the leaves much narrower in outline. It was raised in the Lothians, and made its first public appearance in England some ten or eleven years ago, at one of the exhibitions of the Royal

Botanic Society, when it was exhibited by Messrs. Parker and Williams, of Holloway, and was rewarded by a medal. Two very finely-grown plants, exhibited subsequently before the Royal Horticultural Society, and which had been continuously in bloom for fifteen months previously, afforded a sufficient evidence of its perpetual-blooming habit.

Statice profusa, or *S. Ratrayana*, as it is generally called in Scotland, is shrubby at the base of the stem, which is furnished with oblong, or spathulately oblong-ovate undulated leaves, somewhat rough, with scattered stellate hairs on the surface, and with a ciliated margin. The flowering-stems are from a foot to two feet high, narrowly winged, and branched so as to form spreading corymbose heads of flowers, which latter consist of a bluish-purple calyx and white corolla, much like those of the allied plants.

This *Statice* is an invaluable plant for the decoration of warm greenhouses and conservatories during the autumn and winter, and a useful auxiliary flowering plant at other seasons. It also forms a most attractive and enduring plant for exhibition purposes, its colour being rare among modern specimen plants.

In order to secure strong plants for the ensuing season's bloom, it should be propagated in August or September, taking the young side-shoots with heels, and inserting them in pure sand, in properly prepared pots or pans. They are then to be plunged in a close frame, with a temperature of 65°, and a moderate amount of bottom-heat. As soon as they are well rooted, they should be potted off into 3-in. pots, in a compost of equal proportions of light loam and well-decayed leaf-mould, with the addition of a little silver-sand and peat. As they fill these, and each successive pot, with roots, they are to be shifted on, and kept growing all the winter, in a temperature of 60°, and in a situation well exposed to light. By this treatment they form large bushy plants in 11-in. pots by the middle of May, and will keep up a profuse succession of bloom from that time all through the winter, if placed in a temperature of 55°. When finally repotted, a small proportion of rotten cow-dung is to be added to the soil already named, and a less proportion of leaf-mould used; and when the plants get pot-bound, an occasional watering of weak liquid manure is beneficial.—T. M.

COTONEASTER SIMONSII.

THERE cannot be two opinions about the superior beauty of *Cotoneaster Simonsii*. Its leaves are leaves, as compared with the minute organs produced by other representatives of the genus; and then the berries, which are borne four or five together at the axils of the leaves, are of a very unique tint of scarlet. Above and beyond all this, however, is the superior capacity this variety possesses for growing in the form of a shrub, out in the open border, in the most exposed situation, or amidst miscellaneous shrubs. Under such conditions, its beautiful and somewhat original contour, its peculiar green shining leaves, and its habit, are pleasing and effective in the extreme. Another merit to be added to the list is its great freedom of growth, when compared with

the growth of so robust a plant as the ordinary Laurel, which it not unfrequently outstrips. Notwithstanding the facts I would thus make known regarding its merits as a shrub, and the way in which it adapts itself to the exigencies of even the most exposed situations, I would not for a moment wish it to be inferred that it is unworthy to be placed in a more felicitous position against the wall. On the contrary, I do not think there are many plants possessing its peculiar characteristics that are likely to please more than *Cotoneaster Simonsii* in this especial location. Besides, against a wall, I believe it will bear berries more plentifully, and what is of equal importance, the berries, when ripe, will be likely to enjoy greater immunity from the destructive onslaughts of birds, than when growing in more exposed situations, where they form a greater attraction to them. —WILLIAM EARLEY, *Valentines*.



ECHEVERIA SCAPHYLLA.

FOR the opportunity of illustrating this new hybrid *Echeveria* which was raised by M. Deleuil, of Marseilles, we are indebted to Messrs. Carter and Co. It is a cross between *E. agavoides* and *E. linguæfolia*, and has been named *E. scaphylla* by the raiser, who describes it as a stout low plant, forming a rosette of pale green leaves, of from six to seven inches long, and

about an inch and a half broad, hollowed on the inner and keeled on the outer face, so as to give them the form of a little boat. These leaves are very numerous, closely set, and curved inwards, each terminating in a short mucro or sharp point, the whole arranged in a rosulate tuft of some twelve inches in diameter and eight inches in height. It will make a fine subject for planting out during summer in sunny parterres, being larger than, and distinct from *E. secunda*, now so extensively employed.—T. M.

KITCHEN GARDENING FOR NOVEMBER.

THE instructions for October generally serve for November, and as the heavy rains of the past month have retarded out-door operations, very little variation will be required. If not already done, *Carrots*, *Beet*, *Parsnips*, *Salsafy*, *Scorzonera*, &c., should be taken up in dry weather, and stored away. Dress *Asparagus* beds as already recommended, and place a good coating of half-rotten dung around *Globe Artichokes*. See to the protection of *Cauliflowers*, *Parsley*, &c. Towards the end of the month, before they are injured by the frost, *Walcheren Cauliflowers*, *Backhouse's*, *Grange's*, and *Snow's Winter Broccoli* should be taken up with balls, the outer leaves removed, and the stems planted close together in a pit or frame; they should have plenty of air in mild weather, and be well covered at night during severe frosts; these plants will furnish a supply of nice heads during the winter months. Give *Cauliflower* plants in frames, and under hand-lights, plenty of air; stir the surface-soil, and dust with lime for slugs; if not already done, a quantity of plants should be potted in small pots and placed in a cold frame; they should have plenty of air in mild weather, and be protected from frost. Protect *Parsley* with glass or otherwise, as most convenient. The late *Celery* should now be finally earthed up when dry, and during severe frosts should be well protected with dry litter. *Spring Broccoli* should now be laid down with the head inclining to the north. Continue to lift, when dry, the late crops of *Lettuce* and *Endive*. When the ground is in a proper condition make a sowing of some early kinds of *Peas* and *Beans*, on a dry warm border. When the ground is dry, run the hoe between the rows of *Spinach*, *Lettuce*, *Cabbage*, &c., and dust with lime to kill slugs. Cover with pots and fermenting material some *Seakale* and *Rhubarb* for forcing; but the easiest and best plan of forcing these during the winter, is to lift the roots, and put them in some place where they can have a gentle heat. Continue to clear off all decaying crops, and manure and trench or ridge all vacant ground. Sweep and clean walks, and plant Box edgings.—M. SAUL, *Stourton*.

MASDEVALLIAS.

WE have some Orchids in our collections from the higher ranges or mountain chains of both the Old and New Worlds, or to speak more geographically, the northern and southern hemispheres, that will not bear that excess of heat and coddling to which sadly too many of our most beautiful

Orchids are subjected. Among those best adapted for cold treatment are *Odontoglossums*, *Oncidiums* such as *O. macranthum*, *O. serratum*, *O. cucullatum*, *O. nubi-genum*, and many others too numerous to mention here ; *Disa grandiflora* and many other species as yet unIntroduced ; and last, but not least, the *Masdevallias*. Most of the species of the latter genus bear comparatively large, brilliantly-coloured flowers,—some of a glowing scarlet, like a bar of red-hot iron ; others of the softest silvery lake, purple, red, yellow, green, or of the purest white ; and the plants themselves are of remarkably free and rapid growth when cultivated in a cool, moist temperature.



MASDEVALLIA HARRYANA.

We find fifty or perhaps more species in books and herbaria, but many have yet to be introduced to this country. On the highlands of Peru they attain to an altitude of 9,000 ft. to 10,000 ft. above the sea-level, and are exposed to varied and often very sudden changes of temperature. In growth they are neat and compact, occupying but little space, and they last in flower for several weeks, or

often months at a time ; indeed, when well managed they will keep on growing and flowering nearly all the year.

A compost of fresh and fibrous peat, having a small addition of dried *horse-droppings* and turfy loam, suits them admirably ; and it will be found best in practice to pot them in small pots, thoroughly well drained, for like most other orchids, they require liberally supplying with moisture when growing, both at the roots and in the atmosphere ; but if the compost becomes sour or stagnant through bad drainage, they will speedily succumb. Mix a fair proportion of coarse river-sand with the compost above recommended, and cover the surface of the pots with *living* sphagnum. I would here remark that living sphagnum is one of the best natural tests that can be used to ascertain the humidity of the atmosphere. I never saw it grow freely in any hot-house that was not well adapted for the requirements of orchids ; it soon dries up and dies in a hot, arid atmosphere, but will luxuriate in almost any heat, providing that the atmosphere is constantly humid.

Some *Masdevallias*, though interesting, are scarcely worth cultivating for their blossoms ; such as *M. civilis*, a green-flowered kind, while another dingy species, large masses of which have recently been imported and sold at Stevens', also has greenish flowers, and is about as fragrant as a dead rat, (*M. caudata*?). All the *Masdevallias* are remarkable for having minute petals and lip, the latter often concealed in the tubular portion of the flower formed by the large connate sepals, which last, as a rule, are furnished with caudate elongations or tails. The best species in cultivation are the following :—

M. Veitchii ; glowing orange-scarlet, tinged with purple hairs.

M. towarensis ; flowers of the purest white, 2-6 on a scape.

M. Lindenii ; one of the best ; flowers of a soft silvery lake.

M. ignea ; orange-yellow, or scarlet glowing like a hot iron, the upper sepal bent over between the two lower ones.

M. Harryana ; a large-flowered species ; flowers of a uniform soft purple or lake-colour ; certainly one of the very finest in cultivation (see figure).

M. coccinea ; a rare old species ; flowers red, or orange-scarlet.—F. W. BURBIDGE, *Fairfield Nurseries, near Manchester.*

FRUIT CULTURE.—NOVEMBER.


THE planting of *Fruit trees* may be continued during the month in mild weather, but the sooner it is completed the better. Commence pruning as soon as the leaves are off the trees ; it is much better in every respect to do it at this season than to leave it until spring. Where summer pruning has been properly attended to, there will not be much winter pruning necessary. Go over all the standard trees, and cut away all unfruitful, ill-placed branches ; also all old spurs. The proper thinning of the buds and spurs is a matter of great importance, and is too often altogether neglected. Keep the centre of the trees open. The majority of *Orchard trees* in this country are

ruined for want of proper pruning. Proceed with the pruning and nailing of *Wall-trees* in mild weather. Prune *Currant* bushes; *Gooseberries* had better be left till spring, as birds, particularly bullfinches, often make great destruction among the buds. This is a good time to put in cuttings of *Gooseberries* and *Currants*. Manure and fork over *Strawberry* plantations. Pay great attention to the fruit in the fruit-room; pick out all the small fruit, and any that are in the least decayed, and keep all the best on the shelves.

IN-DOORS.—The *Pine* plants intended for starting in January should now be at rest; ventilate freely when the weather is fine, and keep the house dry; maintain a night temperature of about 60° , and see that the bottom-heat does not get below 80° . Plants that are showing fruit will require a temperature of from 65° to 70° at night, and 80° during the day; water with tepid water when they require it. If succession plants have a nice steady bottom-heat of about 80° , they will not require much attention beyond giving air when the weather permits. Keep a moist atmosphere in the *early Vinery*; the night temperature should not exceed 50° until the buds begin to swell, when it may be gradually raised to 60° . If the outside border is not heated by hot water, see that it is kept sufficiently warm by fermenting materials. Start a second house, and prune the *Vines* in others for starting in succession. Keep houses containing ripe grapes as dry and cool as possible, and remove all decaying leaves from the *Vines*. The directions given last month for the trees in *early Peach* houses are applicable this month for those in the late houses; give the houses all the air possible when the weather is at all favourable. When the leaves are all off, prune *Fig-trees*, and dress with the mixture recommended last month for Peaches; when dry tie the shoots to the trellis; give air freely in open weather. This is a good time to procure young *Cherry-trees* from the nurseries; pot them in turfy loam and a little decayed cow-dung, and afterwards plunge the pots in an open situation. Take advantage of dry weather to get *Strawberries* into their winter quarters. I advise ridging them as a good plan, as the soil can be kept dry, the roots are safe from injury, and the plants are easily protected in frosty weather. A good batch of plants should be put into a pit or vinery, to be in readiness for early forcing.—M. SAUL, *Stourton*.

PICTURES OF PALM TREES.

KENTIA CANTERBURYANA.

URING the past season our greenhouses have been enriched by the acquisition of some very elegant species of Palms from the Lord Howe Islands, a group lying to the north-east of Sydney, in latitude $31^{\circ} 30'$ S. The plants are consequently well adapted for cultivation in a temperate house. Three species have made their appearance in this country: *K. Canterburyana*, *K. australis*, and *K. Forsteriana*, to which M. Linden adds from the same source one which he calls *K. Balmoreana*.

We are indebted to Mr. Bull, of Chelsea, for the illustration we now give of

Kentia Canterburyana, which is also distributed under the name of *Veitchia Canterburyana*. This is the Umbrella Palm of the settlers, and appears to be a remarkably robust-growing plant, though of dwarf habit. The leaves are pinnate, and in the young plants are of a broad ovate outline, consisting of about seven pairs of closely set linear acute segments some seven to eight inches long, and about an inch broad. These fronds are spreading, and the segments rather



KENTIA CANTERBURYANA.

drooping, so that a very elegant arching frond is produced. The leaves are supported on stout, smooth terete petioles. The large plum-like fruits are of a reddish colour. There is a general similarity between these plants, *K. australis* being the most slender and *K. Canterburyana* the most robust. They all form handsome decorative objects, and are of easy culture.—T. M.

THE NEW GLADIOLI.

SOME ten years ago, the Dahlia, as an autumn flower for exhibition, was considered unrivalled, and there is no doubt that it is on the exhibition-table that this flower shows to the best advantage. The Hollyhock, also, when exhibited on the spike, was in much favour; and when Dr. Lindley, or some other writer, ventured in the *Gardeners' Chronicle* to prefer the more elegant and graceful appearance of such flowers as the Phlox to that of "the lumpish Dahlia," a considerable storm of indignation was aroused in some quarters. At that time, the varieties of Gladiolus (hybrids of *gandavensis*) were few, and were not much known as decorative plants. Since that time, however, many superb varieties have been introduced, and the flower has become immensely popular.

Of all autumn flowers, I consider the Gladiolus the most beautiful, and it is withal one of the most useful for decorative purposes indoors, owing to the persistent nature of the flowers after being cut. As the flower annually increases in popularity, so there are of necessity a greater number of persons interested in the new varieties that may be sent out. The best new varieties have been hitherto sent from France, and cultivators are much indebted to M. Souchet for the magnificent flowers which he has sent out; but those sent out this season are not, I think, up to the quality of the last few years. Such of them as have flowered with me I cannot recommend. *Beatrix* is one of the best, but it is too much like *Norma* to have been sent out as a new variety. *Minerve* is a good flower, but it is too much like *Phidias*. *Virginialis* is rather similar to *Mary Stuart*, lighter in colour, but it does not form such a handsome spike as that variety. *Phæbus* is, I am told, one of the best varieties, but it has not flowered with me. *Jupiter* is very distinct in colour, with the flowers large, but it does not form a handsome spike. *Didon* has a long spike of well-shaped flowers, but the colour is not striking or decided. *Antiope*, *Ossian*, and *Arsinoë* I would not care to grow again. Some of the others, though apparently sound when planted, did not appear above ground at all.

This fact illustrates one of the troubles of the Gladiolus-grower, but even this is not so annoying as it is to have them die off suddenly when in full growth. I think over-rich feeding has something to do with the loss of plants when in apparent health. As far as my experience has gone, I find the losses are much greater amongst those grown in rich soil, but on the other hand, the spikes are small, and the flowers are not of good quality if the treatment is not liberal. To grow good exhibition flowers, trench the ground well up, and if the soil is adhesive, use plenty of stable manure to mix with it. In light soils cow manure is the best.

As a pot plant, the Gladiolus is of much value, and a few pots may be grown to get some early blooms, so that a succession may be obtained for as long a period as possible. Four parts of turfy loam, one of leaf-mould, and one of rotted

manure, form a good compost; some silver-sand should be added, to keep the whole open. They should be grown under glass until the first week in May, after which the pots should stand out of doors in a sheltered position, but in the full sun, until they are nearly in flower, when they may be moved into the greenhouse. The *Gladiolus* forms a striking feature in the greenhouse or conservatory, and when flowering plants are scarce, I have with advantage cut the out-door spikes and inserted the cut ends in bottles of water, and placed these in the greenhouse.—J. DOUGLAS, *Loxford Hall*.

HERBACEOUS PLANTS FOR A WET SUMMER.

FIRST among these I would place the *Solidago* or Golden Rod, the *Phlox*, and the *Pentstemon*. The first affords no resting-place for the water, consequently it passes away, and leaves its golden brightness untarnished. Looking at the flowers of a *Phlox*, it would seem one of the most delicate and easily injured by rain, but it is not so; the more rain, not only the taller and stronger grows the *Phlox*, but the brighter and more pure and brilliant the flowers. Not but what the rain and sun, especially the latter, can mar their beauty; but it takes a great deal of rain to do it. Is proof wanted? Here it is: I have never seen such fine *Phloxes* as I have had this season. Then as to *Pentstemons*, they seem made for a wet season; their little tubes are suspended mouth downwards, so that the rain passes over them, and it is gone.

That grand flower, the *Hollyhock*, likewise bears the rain well, provided the flowers are thinned, so as to allow the wet to run off, instead of lazily lying in or on the spike of blossoms. *Dahlias*, again, bear washing well, especially the dwarfer sorts; and that grand white bedder *floribunda nana*, the more it is washed the whiter it grows. *Gladioli* also bear the rain nobly, and the hardier varieties have made a fine display this season.

That grand old border, hedge, or grouping plant, *Fuchsia Riccartoni*, does superbly in such a wet summer as this. It deserves a place in every garden everywhere, and is invaluable for furnishing either outside or in. It is so hardy that I have seen it in Scotland, from 10 ft. to 15 ft. high; and is such a grower, in favourable positions, that I see the Knight of Kerry is using it as a breakwater on the Irish coast, to keep the winds and the spray of the open Atlantic out of his garden. The season has taught me that, with plenty of water and rich food, this rare old *Fuchsia* may be had in great beauty in the usually arid climate of East Anglia.—D. T. FISH, *Hardwicke*.

DIEFFENBACHIA BAUSEI.

SEVERAL very beautiful forms of *Dieffenbachia* are cultivated in our hot-houses, but few of them approach in beauty to the *D. Bausei*, which we now figure from a woodcut kindly placed at our disposal by the Messrs. Veitch and Sons, of Chelsea. The plant is a hybrid raised at Chiswick

by Mr. Bausé, when employed there as foreman of the plant department, and is a hybrid between *D. picta* and *D. Weirii*, the latter a very distinct and ornamental plant, imported by the Royal Horticultural Society through their collector, Mr. Weir.

D. Bausei is probably the finest of all the *Dieffenbachias*. It is of dwarf stocky habit, with dark green stems, the base of the petiole being white; the



DIEFFENBACHIA BAUSEI.

leaves are 15 in. in length, and broad in proportion, of a yellowish green colour, irregularly edged and blotched with dark green, and the whole surface freely spotted with conspicuous blotches of white. The effect is very pleasing and very distinct. Amongst ornamental-foliaged stove plants this will be a real acquisition.—T. M.

NOVELTIES, ETC., AT FLOWER SHOWS.

TO bring up some arrears, I must commence with the Royal Horticultural Society's meeting on August 24. It is really so seldom that First-class Certificates are awarded to *Fuchsias* in the present day (probably because they are rarely shown as new varieties), that there is much satisfaction in recording the advent of *Delight* (F.C.C.), a fine variety, with a white corolla, and deep red tube and sepals, shown by Mr. G. Smith, Hornsey Road, Islington; flowers large and very striking. *Lilium Lishmanni* (F.C.C.) represents a fine variety of the tigrinum type, with large dull-red flowers, profusely spotted with black in a very distinct manner; this came from Mr. T. R. Tuffnell, Uxbridge. The varieties of this useful garden Lily appear to be multiplying rapidly just now, and there is reason to fear some confusion must inevitably result, if great discrimination is not exercised in the awarding of certificates. The following new varieties of *Gladiolus*, raised by Messrs. Kelway and Son, Langport, received Certificates, viz., *Lamergus* (F.C.C.), light scarlet with white feather; *Heloris* (F.C.C.), white splashed with purple, and purple-rose feather; *Orcus* (F.C.C.), salmon, with white bar and white feather; *Grandeur* (F.C.C.), pale pink, with rosy salmon stripes; *Osci* (F.C.C.), deep rosy purple streaked; and *Lycoris* (F.C.C.), salmon-red splashed, with white lip. These were all remarkably fine and striking flowers. The same award was made to *Day-dream* (F.C.C.), splashed scarlet, with white bar and feather; *Rosy Morn* (F.C.C.), white, splashed with rose, and deep rose feather; and *Gwendoline Morgan* (F.C.C.), deep rose splashed, with white flame and feather,—from Mr. Douglas, Loxford Hall Gardens, who appears to be taking a decided lead among amateur raisers of this fine summer flower. *Phlox Drummondii Heynholdii cardinalis* (F.C.C.), is one of the Continental novelties of the present year, the specimens shown coming from the Royal Horticultural Society's Gardens at Chiswick. The flowers are of a dull brick-red hue, with dark centres, in size and shape of the pip inferior to several of the varieties of *P. Drummondii* in cultivation. The following new Dahlias were staged by Mr. John Keynes, Salisbury:—*The Rev. J. M. Camm* (F.C.C.), creamy yellow, flaked with red; *Ne plus ultra* (F.C.C.), pale lilac, very fine form; and *James Service* (F.C.C.), claret-brown, large and of good substance. *Lucy Fawcett* (S.C.C.), a nice tipped flower; and *Mr. Sinclair* (S.C.C.), pale ground, tipped with lilac-red, came from the same exhibitor.

At the meeting of the same Society, on September 4, seedling Dahlias were one of the main features. *Florence Pontin* (F.C.C.), white, heavily tipped with lilac; and *Lord Hawke* (F.C.C.), yellow, with a slight tip of rosy crimson, were furnished by Mr. C. Turner. *Ada Tiffin* (F.C.C.), white ground, heavily tipped with rouge-purple; *Egyptian Prince* (F.C.C.), claret, streaked with purple, a promising Fancy flower; *Matilda May Purchase* (F.C.C.), pale ground, suffused and tipped rosy pink; *William Newman* (F.C.C.), a purple-maroon self; and *William Sinclair* (F.C.C.), white, heavily shaded and tipped with vermilion-purple, came from Mr.

Keynes. *Ceanothus Gloire de Versailles* (F.C.C.), the flower-spikes clear greyish blue, a compact-growing form; and *Cineraria ceratophylla* (F.C.C.), a very dwarf silvery-foliaged variety of *C. maritima* that promises to make a good edging plant, were staged by Messrs. E. G. Henderson and Son. *Dipladenia insignis* (F.C.C.), is an acceptable bright rosy crimson-coloured variety of this gorgeous flower, and came from Messrs. Veitch and Sons. *Dwarf Oranje French Marigold aurea floribunda* (F.C.C.), from Mr. R. Dean, Ealing, is a dwarf-growing free-blooming type, likely to make a good summer-blooming bedding plant, and will be a capital substitute for the *Calceolaria*. *Verbena Fanny Purchase* (F.C.C.), peach, with distinct violet eye; *Star* (F.C.C.), pink, with deep red eye, were shown in fine condition by Mr. Eckford, Coleshill Gardens. Mr. C. J. Perry had *Mrs. Reynolds Hole* (F.C.C.), French white, with pale purple eye, fine pip.

On September 18, as at the previous meeting, Dahlias were again the leading feature, and raisers have no reason to complain that the Floral Committee show anything approaching a niggard spirit in the granting of First-class Certificates. *Laura Haslam* (F.C.C.), yellow tipped with white, a very pretty Fancy flower; *Prince Arthur* (F.C.C.), bright deep yellow, fine form, the best new flower yet shown; *Nelly* (F.C.C.), pale ground, tipped with rosy lilac, nice form and outline; *Arbitrator* (F.C.C.), yellow ground, deeply edged and suffused with pinkish-salmon, novel and distinct; and *Mr. Bateman* (S.C.C.), pale ground, tipped with purple; were staged by Mr. C. Turner. *Queen's Messenger* (F.C.C.), bright purple with shaded maroon base; *Cremorne* (F.C.C.), yellow ground, heavily tipped with orange-lake; and *Walter Reid* (F.C.C.), shaded crimson, bright purple on the edges, were shown by Mr. H. Eckford, Coleshill Gardens. *Verbena Prince of Wales* (F.C.C.), orange-red, lemon eye, was shown by Mr. J. Stevens, gardener to C. J. Boyd, Esq., Cheshunt, and is said to be a good bedding variety. Some blooms of *Clematis Viscount Nevill* were shown by Messrs. T. Cripps and Son; it might be described as a shaded *C. rubella*, with a rich glowing purple tint, and seemed desirable for its distinct colour.

The old *White Wax Runner Bean* (F.C.C.) was exhibited by Messrs. Osborn and Sons, Fulham; the pods are of a waxy cream-colour. A fine *Apple*, sent by Mr. Peasgood, Stamford, received the same award; it is not unlike the Blenheim Orange, but is said to be earlier. It was named *Peasgood's Nonesuch*.

The meeting of the Royal Horticultural Society on October 2nd plainly foreshadowed the coming of the dead, dull season of the year, for there was a marked falling-off in the production of new plants and flowers. *Dracæna gloriosa* (F.C.C.), shown by Mr. William Bull, is one of the best new plants of the year, for it is remarkably robust of growth, the long broad leaves being half pendulous in character, and striped with brownish orange on a bronzy-green ground. *Anchusa capensis* (F.C.C.), known as the Cape Forget-me-not, came from the gardens of the Society; it has deep indigo-blue flowers, with a white eye, and appears as if it would be useful to cut from for bouquets. This was the second time it had bloomed this season, and by means of a little judicious cutting-back, it can be had

in flower for a considerable period. *Colchicum autumnale albiflorum plenum* (F.C.C.) and *Crocus Pallasii* were shown by Messrs. E. G. Henderson and Son, and together with the pretty yellow-flowered crocus-like *Sternbergia lutea*, gave some idea of what beautiful hardy autumn-blooming flowers we possess. The former had large full double flowers of quite a delicate beauty. The Crocus looked much like *C. speciosus*, and was of a pretty purple-blue hue. What appeared to be a true hybrid, obtained by crossing *Echeveria secunda glauca* with *Pachyphytum bracteosum* was shown by Mr. William Ingram, Belvoir Castle Gardens; a more robust but also looser growth had resulted, and the under-part of the leaves was rounded as in those of the *Pachyphytum*.—R. D.

ASTERS AS POT-PLANTS.

ASTERS are deservedly amongst the most popular and effective of our garden favourites. Not only have they profusion of bloom, with richness and variety of colouring, combined with the dwarfest and neatest of habits, but the flowers are also individually almost perfect in many of the beautiful modern varieties.




DWARF CHRYSANTHEMUM-FLOWERED ASTER.

Asters are divided into two sections, viz., the *German*, which have the florets quilled, and the most beautiful varieties of which possess an outer series like the guard-petals of the Hollyhock; and the *French*, which have the florets flat, incurved, or reflexed, in the latter case resembling the Chrysanthemum, whence the group called *Chrysanthemum-flowered* (see fig.), and in the former, having the florets turned in towards the centre, forming a ball, like the flowers of a Pæony, hence the *Pæony-flowered*. Truffaut has greatly improved the French section; the *Giant Emperor* proved a very great advance over older varieties, whilst the

Victoria varieties of to-day have even exceeded it in merit. Indeed, some of the *Victoria* Asters are as perfect as well can be in form and substance, quite equalling the beautiful symmetry displayed in the German section, and far excelling it in habit. There are also some very beautiful miniature varieties, called Pompon or Bouquet Asters, especially Boltze's varieties.

Not only are Asters amongst the most popular of half-hardy annuals for outdoor culture, but they are also very beautiful when grown in pots, and most useful for all kinds of decorative purposes, as the plant figured illustrates. When grown in pots, they may besides be induced to bloom successionally, from the early spring to the shorter days and dreary months of winter. All the attention requisite under this kind of treatment is abundance of light and air, with a plentiful supply of water. The pots should always be plunged up to their rims in damp soil, cinder-ashes, or the like, so as to insure uniformity of moisture at the root, which is not possible when the pots are fully exposed to atmospheric fluctuations. Beyond this, it is unnecessary to occupy time with details of their treatment (which are exactly the same as in the case of other half-hardy annuals), except to advise always to sow in one position, and to transplant to another, and to use fresh soil for the final growing and blooming stage.—WILLIAM EARLEY, *Valentines*.

GARDEN GOSSIP.

 R. FOWLER, of Castle Kennedy, writing of Mr. W. Thomson's *New Grape, Duke of Buccleuch*, observes:—Vines of the Duke of Buccleuch, growing side by side with the Black Hamburgh, growing in the same border, all the conditions the same, are somewhat more robust in habit, the foliage being larger and of greater substance—a sure indication of a good constitution; many of the leaves measured more than 14 in. in diameter. The wood is strong, short-jointed, and very hard. The bunches will, under ordinary good management, average from 1½ lb. to 3 lb. in weight; the clusters are solid and compact, with fine broad shoulders, and unusually stiff foot-stalks; the berries are roundish oval, of the largest size, very equal, and when well finished resemble the finest Muscats in colour. When thoroughly ripened its flavour is equalled by few, and second to no Grape I have ever tasted. Its merits as an early forcing Grape have yet to be tested. It can only be on very rare occasions that a new Grape is presented of sufficient merit to justify its being classed on the same level with Muscat of Alexandria or Black Hamburgh, but I believe that when sufficiently known the Duke of Buccleuch will be as much grown as either of those popular varieties.

— THE leaves of the *Bearberry* (*Arctostaphylos Uva-Ursi*) are exported from Europe to America in large quantities. They have a bitter and astringent taste, due to the fact that they contain tannic and gallic acid. In Sweden they are used for dyeing an ash-colour, and in that country and in Russia they are employed in tanning leather. A new use has now been found for them. Those who have much to do with boilers will be only too well aware that they are subject to incrustation or corrosion to a greater or less extent, according to the nature of the water used. A preparation has lately been brought into notice, under the title of "Armitage's Vegetative," and which consists simply of the powdered leaves of the *Bearberry*; this on being boiled in the boiler, separates the scale, which can then easily be removed. Afterwards, if the "Vegetative" is put into the boiler weekly, the "scale" will not accumulate.

— Two remarkably fine specimens of *Lapageria rosea* have been referred to recently by Mr. Fish. One is the red-flowered *L. rosea* itself, which covers many feet of the back wall and roof of a noble conservatory at Wolverstone Park, the

fine seat of John Berners, Esq., near Ipswich, under Mr. Sheppard's able management. This plant is the lion of that conservatory. For months during the summer the house is quite illuminated with its rosy beauty, glowing on the walls, and hanging in innumerable pendants from the lofty roof. The other plant is of the white variety, *L. rosea albi flora*, and is growing on the back wall of a cool orchid-house at Trentham, where, under Mr. Stevens' skilful treatment, it yields a profusion of its spotless bells, which are extremely useful for cutting. Both cultivators appear to treat the plants very much alike in regard to soil, drainage, and water at the roots. The tops, however, in the two cases are subjected to widely different conditions. At Trentham the leaves grow in the moist, though cool air of a cool orchid-house. At Wolverstone, owing to the character of the back wall of the conservatory, the leaves are always dry. They are two superb climbers for conservatory or cool stove decoration.

— **THE Hardwicke Box** is a very fine evergreen shrub, much like the Handsworth Box in general character. Mr. Fish informs us that the original plant is at Hardwicke, and looks to be about 20 or more years old. Lady Cullum, he writes, "tells me that it came up amongst others. Sir Thomas Cullum, who was a great admirer of Box, thought, I believe, that it was a cross between the Minorca and the Common Box. There seems no doubt it originated here, and all our stock is the produce of one plant. It is most distinct and beautiful. All the other kinds of box seed very freely here, but I have never seen the Hardwicke variety either flower or seed, which is somewhat singular. We have thousands come up in the shrubberies every year, but I have not seen one at all like the Hardwicke."

— **AMONGST Ornamental Hardy Trees** recently noticed in the Milford Nursery were three varieties of the *Sweet Chestnut*. One a silver-variegated sort, which originated at Milford, is called *Castanea vesca albo-marginata*, and has the leaves constantly margined with a narrow border of white. Another, *C. vesca laciniata*, also a Milford plant, has the serratures of the leaves exaggerated into long fringe-like teeth. A third, of Continental origin, the *C. vesca heterophylla dissecta*, is both distinct and elegant; the basal leaves borne on the young shoots are broad and laciniately-toothed, while the upper ones are so much depauperated as to become linear, and at the same time are so much elongated as to become drooping, so that the later summer growth forms an elegant kind of fringe over the surface of the tree. The many ornamental forms of Hardy Trees to be found in collections are not half enough planted.

— **ONE** of the prettiest hardy shrubs we have lately seen is a tricolor-leaved variety of *Cornus mascula* called *aurea elegantissima*, grown by Messrs. Lee, of Hammersmith. The leaves are coloured green, gold, and rose-pink. The habit, too, is good, the branches spreading more elegantly than in the common form. It is a welcome acquisition.

— **MONSTER** specimens of *Todea barbara* are found on the Victorian Alps, whence some have been sent to Europe by Baron Ferd. von Müller. The largest we believe yet obtained, of which figures have been given in *La Belgique Horticole*, and the *Gardeners' Chronicle*, was presented by him to Mr. Booth, of the Flottbeck Nurseries, Hamburg. The height of this enormous caudex, which weighed 1 ton 3 cwt., was 5 ft. 8 in., while the thickness was 7 ft. 9 in. in the larger, and 3 ft. 3 in. in the smaller diameter.

— **THE Cyclamen cilicicum** of Boissier, a little plant well worth growing, has been found to be quite hardy by Mr. Atkins in his garden at Painswick. It flowers from October onwards. The flower-stalks are 3 in. to 3½ in. long; the petals are not more than ⅝ in. long, but fully ¼ in. wide, thus giving a bold appearance to the flowers, which are rosy white, with a rich carmine throat. The foliage has the usual blotches of a lighter colour. There is no difference in the flowers or foliage of the larger and the smaller bulbs, all of which appear to bloom very freely; but the blossoms are scentless.

— **WE** are asked if any of the readers of the **FLORIST AND POMOLOGIST** can give the history of the *Prince Albert Pine-Apple*. Like the Lady Downe's,

and Gross Colman Grapes, it seems to have crept into cultivation as if by stealth.

— **M.** DE GROOT, of Bruges, holds one of the finest and most valuable Hardy Ornamental Trees yet met with in a beautiful *Golden-leaved Quercus americana*, far exceeding *Quercus Robur concordia* in the beauty of the leaf. Its form may be described as that of the Scarlet Oak, which will convey some idea of the size and beauty of its foliage.

— **WE** have previously alluded to *Hydrangea Otaksa* as a fine ornamental plant. It resembles *H. Hortensia* in its aspect and its style of inflorescence, but is altogether stronger and bolder in growth. The colour of the florets is pink, and they are produced in enormous globular heads of from 12 inches to 20 inches across. It should make a fine market plant, as well as an admirable subject for greenhouse and conservatory decoration. Out-doors it grows freely, and is about as hardy as *H. Hortensia*.

— **IN** one of the plant-houses at Ashridge the *Ficus stipulata* (repens of gardens) bore 12° of frost with impunity. The plant clothes the back wall of the house, and during some alterations or repairs was exposed through this severe frost without being any the worse for it. Few plants are more useful than this *Ficus* for clothing the walls of glass-houses, and the fact of its endurance of this exceptionally low temperature will greatly enhance its value for similar purposes.

— **IN** a recent number of the *Illustration Horticole*, M. André mentions having seen at a horticultural exhibition at Orleans a specimen of a *Purple Birch*. It originated as a chance seedling, was grafted on to the common Birch, and was thus exhibited. It has a weeping habit, and deep violet-purple leaves.

— **THE** suggestion thrown out by Mr. Fish for an *Election of Fruit Trees*, writes a correspondent, "is a very good one, but I must take exception to your requiring so much variety. For instance, in the case of Cottagers' gardens, one variety of Apricot (Moorpark) is quite sufficient, and one variety of Red Currant is also as much as is at any time required. Of course the number of plants of each may be multiplied at pleasure. In the case of the larger gardens of Amateurs, taking Apricots as an example, is there any necessity to cultivate more than three varieties? One, indeed, is sufficient; nine is altogether out of the question. Nine varieties of Peaches may be admissible in a large garden, but what can be said of nine Nectarines? It is far too many, seeing that one half of them come into use at the same time. Then, again, six Raspberries. Why, the Prince of Wales and the Red and Yellow Antwerp for summer use, and Rivers' double-bearing for autumn, are all that can be required. To cultivate more is only to cultivate variety. The lists of Apples and Pears, also, I consider far too large for any ordinary sized garden. It is far better to cultivate *several trees of one good sort* than to go into so much variety."

Obituary.

— **PROFESSOR OERSTED**, of Copenhagen, died on September 3. He was best known to the botanists of this country by his work, unfortunately incomplete, on the *Flora of Central America*.

— **DR. WELWITSCH**, the energetic botanical explorer of West Tropical Africa, died on October 20, aged 65. Since his return to Europe, he has chiefly resided in England, for the purpose of publishing his discoveries; and for some time past has been in failing health. But a month or two since, the *Botanical Magazine* published a figure of the rare *Treculia africana*, the Okwa tree, which had been presented by him to Kew in 1864.



CLEMATIS.

1. Viticella rubra grandiflora 2. marmorata.

NEW VARIETIES OF CLEMATIS VITICELLA.

WITH AN ILLUSTRATION.

THE immense and deserved popularity which the *Clematis* has obtained as a hardy flower, has resulted mainly from the success which has attended the crossing of *C. lanuginosa* with certain forms of *C. Viticella*, the species represented in the accompanying illustration by two novel varieties. It is from this species that the remarkably floriferous habit of such sorts as *C. Jackmanni* and *C. rubella* has been derived; and though the varieties we now figure fall short of these latter in gorgeousness of inflorescence, they bring us not only novelty of colouring, but the same profuseness of bloom as we have just referred to. We cannot do better than quote from the new *Clematis* work, by Messrs. Moore and Jackman, recently referred to in our pages, the descriptions given of these new introductions:—

“*C. VITICELLA RUBRA GRANDIFLORA* (fig. 1).—This is one of the most beautiful of the *Viticella* forms, and gained a First-class Certificate when exhibited at South Kensington in July, 1868. The leaves are pinnately-divided, or sometimes biternate, the leaflets being sometimes entire and ovate, sometimes divided into three segments, which fully equal the simpler leaflets in size. The flowers, which are abundant and successional, measure about three inches across, and are composed of from four to six sepals of a rich bright claret-crimson, with green stamens. This charming variety, which has much the habit of *C. Viticella venosa*, and like it is a most valuable acquisition—the profusion of blossoms and the distinctness of colour rendering it exceedingly effective—is the nearest approach to a crimson *Clematis* yet obtained. It was raised in the Woking Nursery.

“*C. MARMORATA* (fig. 2).—This pretty variety has the habit of *C. Viticella venosa*, and flowers both profusely and successively. The leaves are pinnatisect, the basal pinnæ being ternate. The flower-buds are drooping, and the flowers nearly the size of those of *venosa*, composed of four remarkably broad sepals, of a light mauve-colour, marked with a three-ribbed bar, the whole surface of the flowers being speckled with white, in such a manner as to give it a veiny or marbled appearance. It is a very distinct and desirable variety.”

Both these varieties were raised by Messrs. G. Jackman and Son, of the Woking Nursery, to whom we are indebted for the opportunity of figuring them.—M.

HOW TO MANAGE ALTERNANTHERAS.

THE effectiveness of the designs in which *Alternantheras* form so important a feature in summer bedding, and the many communications received, describing the difficulties experienced in cultivating them, induce me to pen these instructions, which, I believe, if followed out, will remove any difficulty which may have been experienced in their management.

First, then, choose only strong healthy cuttings, and depend upon them solely for producing a sufficient supply of plants in spring. The less colour and tendency to flower in stock plants the better; therefore, endeavour to banish it from them by inducing vigour of growth, and for that purpose discard all summer surplus stock plants, and keep up cutting renewals of the more tender and weakly growing varieties, such as *A. amæna*, *versicolor*, and *spathulata*, once or twice during the interval between May and August, again discarding the parent plants as soon as their progeny are rooted. From *A. paronychioides*, and its sports or variations, *paronychioides major*, *magnifica*, *amabilis*, and *amabilis latifolia*, strong

cuttings can be got in quantity from the out-door garden in August, and with them it is therefore unnecessary to follow the treatment recommended for the *amœna* section, unless extra vigour is desired.

About the middle of August fill the desired number of 4-in. pots with cuttings of each kind, and strike them in a gentle heat. About the middle of September they should be ready for a shift into 6-in. pots, and in a month or six weeks later to 8-in. pots, taking care in each case that the ball of earth is not much broken. After this they will push along, gaining strength in growth and foliage day by day, if favoured, during mild weather in winter, with a genial stove temperature ranging from 55° to 60° at night. I do not hesitate to put in a pot of cuttings whenever they are sufficiently strong for the purpose, and thereby the store pots are kept stocky, while at the same time the main supply is increased, and from this an unlimited quantity is to be speedily obtained, in February and March, when a topping of every strong shoot is put in fortnightly, avoiding all weak or ill-matured cuttings.

When cradles, cold pits, and other hardening-off appliances have been filled with *Pelargoniums*, and other bedding plants, the winter quarters of these are filled up as soon as they are vacated, by the different kinds of *Alternantheras*, just potted off into 60-pots, where in three weeks, with a close atmosphere and a slight shade, they become well established; and the cool house or frame, with full exposure to sunshine, brings out their colour, and prepares them for immediate effect, when placed in the positions assigned to them in the flower garden.—A. ROGER, *Battersea Park*.

ROSES AND ROSE-CULTURE.

CHAPTER XIV.—ON HYBRIDISING AND RAISING SEEDLINGS.

HYBRIDISING, with the view of originating new and improved varieties, is a very interesting branch of Rose-culture. A good stock of time and patience should, however, be brought to the work, or little success is likely to attend on it. June is the month for carrying on the operation, and the earliest blossoms should be operated on, so that the greatest possible length of time may be secured for the ripening of the seed. It is well known that only a few varieties bear seeds naturally, and not all of these ripen them sufficiently in the climate of England to retain the power of germination. Hence the necessity of choosing the varieties from experience, when about to engage in the process of hybridising. From this point of view all roses may be appropriately placed in one or the other of the following classes :—

1. Varieties which naturally bear seeds. 2. Varieties which bear seeds if artificially fertilised. 3. Varieties which are barren or unproductive.

The first and second are the only classes with which we have to deal. The first consists for the most part of not very double flowers, in which both stamens and pistils are healthy, vigorous, and active. Left to nature, they generally become self-fertilised, and the offspring degenerates rather than improves. But we

propose to arrest the natural process, and work for improvement by artificial fertilisation. Just before the flower unfolds, open one side of the bud with a knife, and remove the stamens or male organs before they shed their pollen, taking care not to injure the pistils or ovaries; then fertilise the pistils with the pollen of the stranger variety, which should be ready at hand. The operation completed, draw a light canvas bag over the flower, fastening it at the base to prevent the access of bees and other insects. The interior of the flower should be quite dry when fertilised, for moisture, whether in the shape of rain or dew, interferes materially with the success of the operation.

In the second class the flowers are usually more double, and the practice differs slightly. Here we often have to remove petals as well as stamens before the pistils are accessible, but the after process is the same as that already described. This class would seem preferable to the former, because the flowers being more double, the offspring is likely to be of a higher order of beauty.

When the petals decay, the canvas bag may be removed, and should the former adhere to the top of the fruits (hips), they should be carefully rubbed off with the finger and thumb. The berry-like hips gradually swell, and when ripe (in November) they may be gathered, and the seeds rubbed out and sown at once. Looking to the end, the best plan is perhaps to sow them in a frame in a soil composed of loam, leaf-mould, and sand. In the spring many will germinate, although some will lie in the ground until the second year. Precautions must be taken against damage by mice during winter, and against mildew in spring and summer, the latter often proving very destructive to seedling roses when in a young state. Sulphur is the best remedy here, and the young plants should be frequently and plentifully dusted with it, whenever and wherever mildew appears.

The Bourbon, Chinese, and Tea-scented varieties, and some of the Hybrid Perpetuals, will bloom when only a few months old, but there is no advantage in this. It is difficult, if not impossible, to form a correct estimate of their value in this young state; and it is better to remove all flower-buds the first year as soon as they form, by which plan good flowers are secured for the second year.

Looking over a bed of seedling roses is a delightful occupation. Every flower is fresh and new, although few may possess that high degree of floral beauty which we are seeking to obtain. Some we pass by hastily, one in a hundred we may pause over, but probably not one in a thousand is superior to what we already have. But there is pleasure in marking the results of hybridising, and in tracing the connection between parents and offspring, whereby we are enabled to build up theories for future use. Nature, while we walk with her, sometimes reveals to us glimpses of the unknown from out of her hidden and mysterious depths. As we discard this flower and that, because they do not realise our wishes, there is no feeling of disappointment; the finger of hope points onward; the future may reveal something which shall exceed our most sanguine expectations. With what complacency we work. How much of hope and joy

attend our occupation. There is no *ennui*. Time flies with an unusually buoyant wing. Would that those oppressed with gloomy forebodings or carking care, with whom time hangs heavily, could taste the enjoyments Nature here offers them!

Let us suppose the seed to have become ripened, to be gathered and sown. It is of course necessary to protect it from mice and birds, and as the young plants rise they must be shielded from the mid-day sun and frost. Too much air can scarcely be given, even when the plants are in their earliest growth, and by the end of May the glass may be wholly removed, shading in the middle of the day with scrim or Russian mats.

When a seedling of promise flowers it should be marked, that we may afterwards readily meet with it. So soon as buds can be obtained, bud it on the dog-rose to further test the quality. If it should prove to be distinct from or superior to pre-existing kinds, it may afterwards be propagated *ad libitum*.

When hybridising is a part of the programme of Rose-growing, it is a good plan to have a group of suitable sorts planted together, that the attention may be concentrated on one spot in the garden. In this case do not encourage a too vigorous growth up to the time of the setting of the seeds (July), after which the plants should be fed liberally with liquid manure. It is improvident to manure them at any other season, because a vigorous growth in spring is not conducive to fertility. I have seen roses transplanted in March bear seed abundantly the same year, when established plants of the same kinds have not produced a perfect 'seed-pod.' Still there is a great drain on the resources of a plant in summer and autumn, when the seeds are forming and ripening, and this requires to be met, or there is a chance of failure through imperfect development.—WM. PAUL, *Paul's Nurseries, Waltham Cross, N.*

THE IMPERIAL CAULIFLOWER.

ACCORDING to the French *Revue Horticole*, the Imperial Cauliflower is a new variety of much merit. M. Bossin, who grew it at Hannencourt along with the Lenormand Cauliflower, and has had two years' experience with it, describes it as being a less bulky plant than the Lenormand, the leaves more elongated and of a paler-green, but with the heads nearly as large as those of the Lenormand, very white, close, and fine-grained, with a delicate marrowy flavour when cooked. Its great merit, however, consists in its earliness, the heads having been fit for use one season 18 days, and the succeeding one 32 days, before the Lenormand, cultivated under the same conditions. The variety appears to have been raised by M. Monnier in 1868, and was put into commerce in 1869, but had not much publicity given to it, the raiser being, as he states, assured that its merits would soon bring it into notice.

The two varieties in question, as grown at Hannencourt, were sown under the same conditions about the beginning of October; the plants were pricked out into frames in November, and replanted in February, and about the middle of March were planted with good balls in a warm bed in the usual manner. By

April 18, the Imperial was fit for table ; the Lenormand had then scarcely begun to turn, and was not fit to cut before May 20. By the beginning of July seeds of the Imperial were nearly ripe, while the Lenormand was only commencing to flower. M. Bossin affirms, from his experience, that this novelty must take a first rank amongst the good varieties of the Cauliflower.—M.



CAMPANULA MEDIUM CALYCANTHEMA.

FEW of our hardy border flowers are more pleasing, or of more value as garden ornaments, than the old Canterbury Bell, called *Campanula Medium* by botanists—a biennial plant, of pyramidal growth, which inhabits Central Europe, and was introduced to our collections nearly

three centuries ago, but which still holds its own; and which, whether we regard the forms with single or double blossoms, purple, blue, rose, or white, of which it gives a rich harvest, stands unrivalled for its beauty.

As occurs in other species of Bell-flower, *C. persicifolia* to wit, the blossoms of the Canterbury Bell are sometimes seen to be doubled or duplicated in a very peculiar manner. The ordinary single form bears flowers of the shape of a broad cleanly-modelled and open bell, and the usual double forms are made up by the crowding into the interior of this bell of certain petaloid out-growths of the floral whorl, producing a flower on the model of that of a double *Petunia*. The variety we are now describing, and which, thanks to Messrs. Waite and Co., we are able to figure, takes quite a different development. In habit the plant resembles the well-known old blue or white Canterbury Bell, "but the corolla is much larger, and the calyx in addition is enlarged to nearly 4 in. in diameter, presenting the form of a saucer, and changed from its ordinary green colour to the same hue as that of the corolla." The broad bell-shaped corolla of the single flower is perfectly formed, but instead of the usual small leafy calyx, this organ becomes much enlarged, and takes on a petaloid character; and it is this which forms the peculiarity of the flower, and adds so much both to its interest and to its beauty.

We look upon this variety, of which we saw flowering plants last summer, as a real acquisition amongst hardy biennials. The fact that it comes true from seeds will place it within easy reach of all; and we, therefore, unhesitatingly commend it to the notice of lovers of hardy flowers. The culture is precisely like that of the common Canterbury Bell.—T. M.

REST: AS IT CONCERNS FRUIT-TREES.

THAT diurnal as well as annual or periodical rest is essential to vegetable life is, perhaps, indisputable; but that the peculiar requirements of the various plants and trees under cultivation, are sufficiently studied and attended to in this respect is, I think, questionable. Nature's only method of securing diurnal repose to plants, appears to be that of subjecting them to a considerable reduction of the temperature at night, and unless we imitate her example in this respect in our artificial climates, partial or total failure will inevitably result. It is, however, respecting annual or periodical rest, more especially in connection with fruit-trees, that I wish to make a few remarks. The occupants of our stoves and greenhouses receive a fair amount of attention in this respect, but no one will, I think, venture to make the same assertion with regard to our fruit-trees, which, if possible, require it the most.

Dr. Lindley says, "Rest is effected in one of two ways, either by a very considerable lowering of temperature, or by a degree of dryness under which vegetation cannot be sustained." The former appears to be the means used by nature for the purpose in the temperate and northern latitudes; and the latter, sometimes combined with the former, in the hot and tropical ones. Do we in

the cultivation of our exotic fruit-trees closely follow her example? Take the Peach tree as an instance. The Peach is said to be a native of Persia. The climate of a mountainous country like Persia is necessarily varied, still a few of the valleys and low plains (the home of fruit-trees) are very like each other, and are said to be particularly fertile, producing fruit in great variety and abundance. The climate of these valleys is said to resemble closely that of the tropics, having a *dry* and a *rainy* season, and although they are occasionally inundated by the overflowing of the lakes during the season of growth, they are afterwards subjected to *great heat* and *dryness*. The mean temperature is said to be 51° during the season of rest, 65° during growth, and 80° during the season of ripening, the ground temperature during those seasons being 55° , 65° , and 78° respectively. The temperature of England during the same seasons is: of the air, 40° , 51° , and 58° , and of the earth, 42° , 55° , and 60° . If we accept these statements as being nearly correct, it can no longer be a cause of surprise, even if the difference of temperature alone be regarded, if we fail to secure an annual crop of out-door Peaches. We are, perhaps, indeed, scarcely justified in expecting a fair return for the labour and expense attendant upon the cultivation of the Peach, in this unfavourable climate, except under glass, but ought rather to follow the advice of our veteran father in fruit-tree culture, and plant the peach in the orchard-house only.

But if such must be the case, what are those persons to do who cannot afford the luxury of a peach-house, or even of an unheated orchard-house? Is there nothing further which can be done in order to secure an out-door crop of fruit? Is there no other untried remedy? or has every scheme which ingenuity can devise been tried and found wanting? Is there not yet another enemy which has been either forgotten or disregarded while we have been so fiercely combating the two great recognised enemies,—spring frosts and cold summers?

But what are the special advantages of the unheated orchard-house? Some say they consist in the climate therein more nearly resembling that of the South of Europe, which is undoubtedly true; but is it in heat, light, fresh air, or in what is it that the superiority consists? The mean temperature of the orchard-house may be somewhat higher than the uncovered south wall, but that alone is scarcely sufficient to account for its superiority. Besides we have, even in the coldest summers, sufficient heat on the open wall to ripen the peach to, at least, a moderate degree of perfection; and as to light and freedom of access to fresh air, the uncovered wall has a manifest advantage; while, as a protection from spring frost, the ordinary coping and woollen blind is found nearly as efficient as the glass covering.

Where, then, is the advantage? Is it because in the orchard-house we can more easily administer or withhold food at the proper time? Is it because we have the means to prevent 7 in. of rainfall deluging the borders in January, as it did this year, when the trees should have been at rest? In short, is it because in the orchard-house we have entire control over the roots, but in the open air

scarcely any ; or if we have the means of control, we fail to use them, believing that it matters not what amount of water the roots absorb during the resting season, provided we fight valiantly with spring frosts ? The golden rule—"That the most suitable condition of the soil at the period of vegetable rest is that in which no more aqueous matter is contained than results from the capillary attraction of the earthly particles" is despised ; the laws of nature are disregarded, the roots being too often allowed to suffer from dryness during the season of growth, while constantly saturated with wet during the season of rest, when there is neither foliage to appropriate nor sun-heat sufficient to dispel it. Every border so circumstanced is an enemy to the peach, perhaps more to be feared than any, or all others. The trees become gorged to excess, frost ensues, and lacerated bark, gum, and canker soon make their appearance. They become an easy prey to insects, unfruitfulness and general debility follow, and ultimately death, the secondary or lesser evil too often receiving credit for the result. If the roots of Muscat Vines require protection during winter, why should not those of the Peach also, seeing they are both natives of the same country. Not that I would advocate the protection of the whole width of a south border, as I believe the Peach-tree roots to be in a much more favourable position, when confined to a space within five feet of the wall—as may be easily verified by the use of bottom-heat thermometers placed outside and inside this line at any period of the year.

This season's experience has proved most fully that spring frosts, although fearfully destructive, are not nearly so permanently injurious as are wet borders during the resting season ; nor does frost exert such a baneful influence upon the blossoms of a tree whose roots are in a moderately dry border, as it does upon those of a tree whose roots are in a border that is saturated with wet. Neither do trees whose roots are in the former state, and when the protection has been continued till late in spring, have that tendency to commence growth so early as those do whose roots are in the opposite condition,—an advantage, in this climate, which cannot be too highly appreciated.

The fruit-trees in this neighbourhood presented an appearance, in the spring of this year, which plainly indicated, long before growth commenced, what the result would be, even without the aid of the frosts which followed. If, then, this evil, which has been generally so long disregarded, can be so easily remedied, and a fair annual crop of fruit, not excepting the present season, thereby ensured, and that in a locality which is particularly wet and unfavourable, and subjected to the greatest extremes of temperature which are experienced in England, is it not worthy of a more extended trial, more particularly in damp situations, and in wet and retentive soils, before finally deciding that the orchard-house or that huge copings are the only means of obtaining a satisfactory result ?

Not that I by any means disparage the orchard house, or even wish to compare the advantages derived from simple root-protection with those which it affords ; but what I do mean is, that while we are exerting all our powers of thought to

discover the most efficient coping and spring protection for the head of the tree, we should also bestow a little more thought and care upon—the, if possible, more vital part—the root; and at the same time, not altogether neglect to provide the tree with the proper and necessary means of obtaining a fair share of nature's great restorer—rest.—THOMAS CHALLIS, *Wilton*.

DISA GRANDIFLORA.

THE Cape district of Southern Africa is rich in terrestrial orchids, but there are few, if any, that rival the gorgeous beauty of this superb species. In my travels among orchid-growers I have very often been asked how it is that the *Disa* is so difficult to cultivate. I have seen plants struggling in many different situations—sometimes in a dry hot plant-stove, infested with thrips and red-spider, and looking yellow and sickly; indeed, it is the rule, not the exception, to find it struggling for existence, and nearly starved to death through lack of the only conditions under which it succeeds—a cool humid atmosphere, a shady position near the glass, and a liberal supply of water at its roots. It has several times been flowered out of doors, in this country! This fact proves its hardy nature; still to grow it to its full and proper development a cool, shady, house or pit is necessary. I should only be too glad to hear of Mr. James Backhouse giving it a trial in his splendid Rock Garden at York. There one may find our native *Cypripedium Calceolus* luxuriating in great healthy patches, and having 20 to 30 flowers expanded at the same time! *C. spectabile* also grows well at the same place; and *Sarracenia purpurea*, *Darlingtonia californica*, the North American Fern *Adiantum pedatum*, and many other rare and beautiful plants, withstand the rigour of our Northern winters unscathed. No doubt the Cape *Disa* would prove hardy if planted in one of the many excellently sheltered positions which this charming Rock Garden affords.

There is an erroneous idea prevalent among many growers, that orchids should be kept dry and induced to rest during our winter months, but however desirable this may be, it nevertheless happens that many orchids adhere to the habits formed in their native habitats, and persist in growing during our gloomy winter season. Now to keep the *Disa* dry during our winter is next to killing it outright, because as a rule it commences its growth in October or November, and keeps on growing if properly treated until the succeeding July, August, or September, when it flowers. All through its season of growth it must be syringed once or twice daily; and provided that the pan in which it is grown is thoroughly well drained, and the compost fresh and porous, it is next to impossible to give this plant too much water at its roots. The best compost in which to grow it is bog-peat; the more fibre it contains the better; this forms the *pièce de resistance*, to which add one-fourth dry and sweet *horse-droppings*, and sufficient well-washed road or river sand to keep the whole in a porous condition. The superb *Disas* grown by Mr. E. Culley, gardener to E. Salt, Esq., Ferniehurst, Yorkshire, are planted in a compost similar to the above, and the plant has never fared so well



DISA GRANDIFLORA.

with any other cultivator, since Mr. Leach astonished the orchid-growing world in the summer of 1862 with his splendidly grown plants of this species.

There are many species of *Disa* indigenous to the Cape district, one or two of which have been offered for sale at “Stevens’ Rooms” during the past summer. One of the best of the unimported species is *D. macrantha*, a plant that sports into numerous beautiful varieties, which vary in colour from nearly white to the deepest rose, heavily spotted and blotched with crimson. This would form a fine companion plant to its glorious congener at present under discussion, if some resident collector would carefully pack up the plants when at rest, and send them to enrich our collections, which, it must be confessed, are strikingly deficient in terrestrial orchids, although rich in sub-terrestrials, and epiphytes proper.

Disa grandiflora is one of the few orchids, comparatively speaking, that have been raised *true* from seed. The seeds of this plant, and also those of *Cypripedium Schlimmi*, germinate very freely on *living* sphagnum moss, and their progeny appears to vary but slightly from the parent plant, while most other orchids vary more or less, even if fertilised with pollen taken from a plant of the same species as the parent. In order to obtain seed from the *Disa*, the club-shaped pollen-masses (*a.*) must be removed from the elongated anther-cases (*a.*, fig. 3) and brushed, or drawn gently over the rounded viscid stigmatic surface (*b.*, fig. 3), after which the flower soon commences to wither, and the ovary or seed-vessel to enlarge. Mr. James Anderson, of Meadow Bank, near Glasgow, has succeeded in germinating the seeds of *Disa* by the hundred! (*Gard. Chron.*, 1872, 603.) The surface of the pan in which this, and, indeed, nearly all other orchids are grown, should be covered with a layer of fresh living sphagnum, which is one of the best natural indicators of the humidity of the house in which it grows. We have here upwards of fifty imported *Disas*, and hope to be successful with them, treated as above recommended.—F. W. BURBIDGE, *Fairfield Nurseries*.

AQUATICS.—CHAPTER VIII.

THE great Yellow American Water-Lily, *Nuphar advena*, was first sent to this country from Carolina, in the year 1772. There is a good plate of it in the *Botanical Magazine*, t. 684. It is the *Nymphæa advena* of the *Hortus Kewensis*, and is by far the most robust of all the *Nymphæa* tribe, its nearest congener being *Nuphar lutea*, which, like it, has very strong rhizomes, but it may be distinguished at first sight by its more erect habit, as the greater portion of the leaves stand upright above the surface of the water, and wave about with the wind; moreover, they are larger and more oval in shape than in the *N. lutea*. There is one peculiarity about this plant which is so unusual that it is worth recording, namely, that it will grow in *salt water*. Now this is an ordeal that few fresh-water plants will stand; nevertheless, I saw, once on a time, large tufts of the glaucous *Elymus*, growing by its side on the sands near the harbour at Ostend, the roots and tops of both plants being immersed in salt water at every flow of the tide; and it appeared to be growing

vigorously. The *N. advena*, however, does not appear to relish being planted in cold spring-water, that is to say, if planted near to the spot where the spring is continually running into the pond. It is most suitable for ponds or lakes of large dimensions, and may be planted in the way recommended for *Nymphæa alba*, in the FLORIST for 1871, p. 205. It begins to flower about midsummer.

Nuphar Kalniana was introduced from Canada in 1807, and is figured in the *Botanical Magazine*, t. 1243. It is a nice little plant, and bears the same relation to the *Nuphar advena* as the *Nymphæa odorata* does to *N. alba* (see FLORIST, December, 1871, p. 274). The flowers are yellow, about the size of a shilling, and are usually produced in July and August; the leaves are from 2 in. to 2½ in. across, and lay flat upon the surface of the water. It is very suitable for tanks or basins of small size. If planted in ponds or lakes, let it be done as recommended for *Nymphæa odorata*, or you may just peer over the margin of your lake some unlucky morning and find your plant missing. It is not very commonly met with.

Nuphar sagittæfolia is the *N. longifolia* of Michaux. It was sent from Georgia in the year 1824, and is figured in the *Flora Americana* of that author (v. 1, p. 312). The small yellow flowers are produced in July and August, and the leaves are arrow-headed in shape. Unfortunately the plant is now lost to our gardens, but from the foliage being so dissimilar to that of any other member of the family, it would be a very desirable to get it reintroduced, and to this end it is here placed on record.—W. BUCKLEY, *Tooting*.

FRUIT-CULTURE.—DECEMBER.

THE instructions for November will serve for this month. *Fruit-trees* of all kinds may be planted in mild weather, if anything has prevented it being done before; it is better done now than put off till spring. Give all newly planted trees a good dressing of half-rotten dung around the roots, and see that Standards and others liable to be blown about by the wind are properly secured to stakes. Proceed with the pruning and nailing of *Wall-trees* in mild weather; also the pruning and thinning out of *Standard* and *Dwarf* trees. Endeavour to get through as much of this work as possible before spring, when so many other operations, which admit of no delay, demand attention. Give *British Queen* and other tender sorts of *Strawberries* a dressing of half-rotten dung, to protect the crowns from injury during frosty weather.

IN-DOORS.—The directions given last month for *Pines* are applicable this, and should be steadily adhered to. The fruiting house will require careful attention at this season; give a little air at every favourable opportunity, and water with tepid water, when they require it; keep the atmosphere moderately dry, and maintain a temperature of from 60° to 65° at night, and 80° to 85° during the day. Attend to succession plants in all stages, and see that they have a nice steady bottom-heat; keep them steadily moving, but not excited, and in frosty weather use coverings as much as possible, in order to obviate the

necessity for too much fire-heat, which in the absence of solar light weakens the plants. If the early *Vines* were started in October as recommended, they will now be breaking; remove at once all the weak shoots, and such as are not wanted, and tie in those retained as soon as they are long enough to require it; maintain a temperature of from 60° to 65° at night, and 70° to 75° during the day, with an increase by sun-heat; give air freely when the state of the weather permits, and always as early in the forenoon as possible; avoid too moist an atmosphere at this season. Keep inside borders well watered, and see that there is sufficient fermenting material on outside borders to keep up a nice heat. Keep the late *Vineries* as dry as possible, without using too much fire-heat; look over the bunches frequently and cut out all decaying berries. To have ripe *Peaches* in May the early house should be started now; commence with a temperature of from 40° to 45° at night, and 55° to 60° by day, with an increase by sun-heat; maintain a moist atmosphere; syringe the tree two or three times daily; exclude frost from late houses, and dress and tie trees in bad weather. This is a good time to shift *Figs* in tubs and pots; use a compost of turfy loam and rotten dung, and press the soil firmly in potting; keep sufficient fire-heat to exclude frost. Introduce the first batch of *Strawberries* for forcing into a vinery at work; keep them near the glass, and let them have all the air possible.—M. SAUL, *Stourton*.

KITCHEN GARDENING FOR DECEMBER.

AS the long continuance of wet weather has made vegetables more than usually susceptible of injury from cold, the protection of everything likely to suffer from frost should now be attended to without delay. See that there is a sufficient quantity of *Parsley* protected. Cover *Celery* in frosty weather with dry litter. If not already done, *Cauliflowers* that are heading should be lifted, and planted close together in a pit or frame; *Endive* and *Lettuce* should also be lifted, and planted in frames. *Cauliflower* plants under hand-glasses should have plenty of air in mild weather. Remove dead leaves from *Brussels Sprouts* and *Broccoli*. If not already done, *Spring Broccoli* should be laid with the heads inclining to the north. Take advantage of a fine day to run the hoe amongst young crops of *Lettuce*, *Onions*, *Spinach*, &c. Sow some *Peas* and *Broad Beans* on warm sheltered borders. When the *Peas* sown last month are up, a little soil should be drawn up on either side of the rows, and either quick-lime or ashes strewn over them; and in frosty weather some evergreen branches should be stuck on either side of the rows. Cover up more *Seakale* and *Rhubarb* with pots and fermenting material, to force for succession. Take advantage of frosty weather to wheel *Manure* to those parts of the garden where it is wanted. Spare no labour now to get the ground in proper order for the coming spring, by manuring and digging, trenching, or ridging. It should now be decided what crops are to occupy the principal quarters next season, that the ground may be treated accordingly. Clean and

dig borders. Clean and sweep walks; plant Box edgings; and push forward alterations as the weather will permit.—M. SAUL, *Stourton*.

FLOWER-GARDEN MANAGEMENT.—DECEMBER.

THE protection of choice and tender plants will now be one of the principal things requiring attention here, as we may expect more or less frost for some time. Cover beds containing *Bulbs* with spent tan, or rotten leaves. *Tea-Roses* should be lifted, and laid-in in a dry, warm sheltered situation, where they can be protected from frost. Give beds containing *Roses* a good dressing of rotten dung. *Hardy Roses* may still be planted in open weather; stocks for budding next season may also be planted. Sweep and roll lawns, clean and dig shrubberies, plant edgings, lay turf, and push forward alterations of all kinds when the weather is favourable.

IN-DOORS.—*Hardwooded Greenhouse plants* should now be kept as much as possible in a state of rest. Fire-heat should only be used when absolutely necessary. In frosty weather use coverings as much as possible; it is preferable to too much fire-heat, which only excites and weakens the plants. Look frequently over the specimens, and occasionally turn them round. Attend carefully to the watering of all plants. In bad weather, prune and dress climbers; wash, clean, stake, tie out, and train all plants that require it, and endeavour to get as many little things done as possible that may hasten work afterwards. *Pelargoniums* will require considerable attention at this season; look carefully over the plants, and remove all decaying or superfluous shoots and leaves; keep the plants well laid out, so that the sun and air may have free access to their centres; keep them near the glass, and attend carefully to watering; fumigate occasionally to keep down the green-fly. Fire-heat will now become necessary, especially in frosty weather, as the night temperature should not fall below 40°; give some air at every favourable opportunity, but guard carefully against cold draughts. The strongest plants of seedling *Cinerarias* and *Chinese Primroses* will now be coming into flower, and should be placed in suitable positions. *Bedding*, and other plants in pits and frames, will require great attention for the next six or eight weeks. In the absence of frost and snow let them have all the light possible, and as much air as can be given with safety to the plants; keep them as dry as possible, giving no more water than is absolutely necessary, and keep them well covered up in frosty weather.—M. SAUL, *Stourton*.

ADIANTUM AMABILE.

MAIDENHAIR FERNS have much increased in numbers in our gardens, during the past few years; and amongst the new acquisitions few are prettier than the subject of this notice, which was introduced by the Messrs. Veitch and Sons, of Chelsea, and of which the following description was published by us in the *Gardeners' Chronicle* (1868, p. 1090):—"The fronds are of a beautiful light green colour, thin and membranous in texture,



ADIANTUM AMABILE.

and small and elegant in regard to the size and form of their ultimate divisions. These peculiarities, together with the gracefully curving lines assumed by the fronds and the pinnæ, render it one of the most lovely of the Maidenhairs, and one which cannot fail to become a favourite in all choice Ferneries. The lobing of its fronds alone gives it a character perfectly distinct from that of any other similar species at present known in our gardens or herbaria."

The plant is a free-growing, cool-stove fern, of about a foot and a half in height, the fronds being triangular-oval in outline, tripinnate in division, drooping in habit, and, as observed by the Messrs. Veitch, fragrant, with a most agreeable perfume when young. A peculiar and distinctive aspect is given to it by the deep forked lobes of the pinnules generally, and especially by those of the enlarged pinnule which frequently terminates both primary and secondary pinnæ. The sori are small, occupying a notch in the centre of the lobes. It was collected by Mr. Pearce in Peru, and is a most graceful and elegant species.—T. M.

ECHEVERIAS FOR GARDEN AND GREENHOUSE.

A FEW notes on some of the more useful of the *Echeverias* may prove useful at this season. *E. secunda* and *secunda glauca*, also the small variety, *pumila*, are nearly hardy, and, if kept in a dry cold frame, they will do very well; these are increased by offsets, or by seeds, though they produce more offsets if not allowed to flower. The leaves will produce young plants at the base, if taken off when plump and laid upon the surface of the soil, in a box or pot. The seeds should be sown in shallow pans, which should be set on a shelf, and kept moderately moist.

E. metallica will not stand frost or much damp in winter. If planted out in the end of May, the plants grow rampantly; but if not required to increase much in size, they should be plunged in their pots. At the end of September they will be coming into flower, when they may be taken up, and put into as small pots as they can be got into, and set in the greenhouse on a shelf, so as to give them plenty of light, with dry air. The seed will begin to ripen in December, and should be picked as it ripens, and sown at once in shallow pans, and put on slight bottom-heat. The young plants must be potted off as they get large enough; some will come up three months before others. Old plants cut down strike freely at any time, but the leaves will not strike. When in flower this species requires to be watered freely. *E. glauco-metallica* requires similar treatment; if required true, it must be increased from cuttings, as it is a hybrid.

E. lurida, *calophana*, *Scheerii*, *atropurpurea*, and *canaliculata*, all increase freely from the leaves, and especially those formed on the flower-stalks; they should be taken off with care, and set round a 3-in. pot, putting a quarter of an inch of soil on their bases; they will soon grow at any season. These sorts will not stand frost.

E. farinosa is a white-foliaged caulescent branching species, the leaves of which are half an inch wide, and three to four inches long. It is increased by

cuttings or by seeds, and is a good bedding plant, but will not stand frost. *E. californica* comes near to it, but the leaves are not so farinose, and are rather shorter, as is the stem; otherwise they are very similar. *E. laxa* is another of the same set, differing from *E. californica* in the same direction, and in about the same degree, as from *E. farinosa*.

E. nuda grows from six inches to two feet high, and has rotund, lurid green leaves. It is not hardy. *E. rosea* comes near this, but the leaves are narrower, and the plant branched. It is increased by cuttings.

E. retusa and *E. fulgens*, sometimes called *retusa major*, or *elegans*, or *splendens*, are near relations. They are very good winter flowerers; if cuttings are planted in March they will grow on well in a cool frame, freely exposed during summer, and will flower from October to February, in succession. Loam and leaf-mould is the best soil for them. They will increase from leaves freely enough.

E. pulverulenta is a slow grower, having a stem an inch thick, and bearing leaves one inch to one inch and a half wide, and from four inches to six inches long, flat and recurved, and covered with a farinose powder. It can be increased from seeds only, as if the top is taken off a large plant, the old stem dies. Seedlings must be kept near the glass, or they will damp off. It is a very beautiful plant, but if set outside, the rain spoils it, and when in a house it must never be syringed.

E. agavoides is a stemless plant, with very fleshy leaves. It does not throw offsets, but may be increased by means of the leaves, if they are taken off with care, and the thin base cut off clean. It is a very good plant for the centre of small circles, but will not withstand cold or rough usage. In winter it should be kept on a shelf perfectly dry.

E. coccinea is a tall hirsute canaliculate-leaved species, with scarlet flowers. *E. bracteosa* is a much branched species, with lanceolate green leaves. It is nearly hardy, and will grow anyhow and anywhere. The first of these is a bad grower; and the second is indifferent in regard to its flowers.—J. CROUCHER, Hammersmith.

LARGE-FLOWERED PELARGONIUMS OF THE YEAR.

BY way of continuing the record of these flowers commenced at page 193, I have now to call attention to a batch of new varieties to be distributed by Mr. J. Wiggins, gardener to W. Beck, Esq., Worton Cottage, Isleworth. The name of Beck has for so long a time been associated with the large-flowered Pelargonium, that the non-appearance of any new varieties from that quarter would be like snapping a link in a chain of old associations of a powerful character. I am always delighted with a look through the seedling Pelargonium house at Worton Cottage at the proper season. It is a square, span-roofed building, and it not only presents a gay picture, but a very interesting sight when the plants are in full bloom. A large number of them are seedlings passing

through the second and sometimes third year of probation ; some are yearlings throwing up their flowers for the first time.

Mr. Wiggins has selected twenty varieties, which he divides into his best and second-best ten. The former comprises *Ariadne*, deep rosy scarlet, maroon blotch on top petals, and crimson margin ; *Esther*, light rosy pink, large white throat, deep blotch on top petals ; *Fair Ellen*, a very large salmon flower, with clouded top petals, margined with crimson ; *Galatea*, light pink, very dark blotch on top petals, a charming flower ; *Hypatia*, white, with deep maroon blotch on top petals, large and bold ; *Marie Stuart*, pale flesh, very dark blotch on top petals, margined with crimson, a pleasing, delicate flower ; *Pygmalion*, dark crimson, shaded chocolate top petals, margined with crimson, high-coloured and striking ; *Queen of Shara*, a pretty pink flower, with good dark top petals ; *Saxon Maid*, rosy pink, with dark clouded blotch on top petals, extra large, and very striking ; and *Sunrise*, bright rosy-salmon, dark top petals, margined with rose.

The second-best ten contains the following varieties :—*Bella*, bright carmine, white eye, very dark top petals ; *Caprice*, a very showy scarlet flower, dark top petals, margined with orange-red ; *Dinah*, white lower petals, with deep purple top petals ; *Elsie*, clear rose, dark blotch on top petals, white throat ; *Hildah*, carmine, with maroon blotch on top petals, margined with rose ; *Jaqueline*, light ground with crimson spots, a pretty variety ; *Madalena*, light rose, with maroon blotch on top petals, pure white throat ; *Rajah*, lilac, heavily painted with dark, dark top petals ; *Unice*, carmine, with large dark top petals ; and *Unique*, pale mauve, with dark blotch on top petals, very showy, and of large size.

I think a little fault may be found with Mr. Wiggins owing to his habit of reproducing names previously given to seedlings of his own and others' raising. Such names as *Ariadne*, *Fair Ellen*, and *Galatea*, for instance, are repeated, perhaps, before other flowers so named are out of cultivation. The practice engenders confusion, and it is apt to be misleading also.—Quo.

GARDEN LITERATURE.

UNDER the title of *Les Serres-Vergers*,* M. Ed. Pynaert has published a useful little manual, which embraces the whole subject of the art of forcing fruit-trees. Being well grounded in the practice as well as the science of his subject, M. Pynaert has here produced an excellent handbook which may be consulted with profit by those who have occasion to study the subject. It is one of the many little books, written in the French language, which young gardeners of the present day would do well to qualify themselves to read, and from which they would be likely to derive many useful hints. The present treatise is divided into four parts, treating, respectively, on forcing fruit-trees ; on the culture of fruit-trees under glazed protectors ; on the retarding of fruit-trees ; and on the culture of fruit-trees in pots. To each of these, several

* *Les Serres-Vergers*, traité complet de la Culture Forcée et Artificielle des Arbres Fruitiers. Deuxième édition. Par Ed. Pynaert, Professeur à L'Ecole d'Horticulture de l'Etat. Avec 65 figures. Paris: Victor Masson ; Gand: Hoste.

chapters are devoted, dealing first with general considerations, as soil, manure, water, air, heat, &c.; and then entering on the special culture of the several fruits, taken *seriatim*, and including stone-fruits, as the Peach, Apricot, Cherry, Plum; berry-fruits, as the Vine; and other fruits, as the Fig, Raspberry, Gooseberry, Currant, and Black Mulberry. Few persons who have not tasted the latter as grown under glass, can have any idea of the luscious and melting fruit it becomes when thus ripened.

We have also received two numbers of the second edition of SCOTT'S ORCHARDIST, or Catalogue of Fruit Trees cultivated at Merriott, Somerset, which is a description of the largest collection of hardy fruit-trees, we suppose, cultivated in any one establishment, extending as it does to 1,800 varieties of Pears and other fruits in proportion. Mr. Scott has very decided opinions on some of the pomological questions of the day, to which he does not hesitate to give utterance; but apart from this, so large a number of descriptions made "as useful and as truthful as the author's abilities have permitted," cannot but be of interest and use to fruit-growers generally. No fewer than 130 closely printed octavo pages are devoted to the description and synonymy of the Apple.

GARDEN GOSSIP.

A REMARKABLE specimen of *Cattleya exoniensis* which has recently flowered at Meadow Bank had on it no fewer than 44 flowers, all expanded at one time—a truly gorgeous sight. This variety combines all the characteristics of beauty of all the Cattleyas, while there is in it a perfection of form and individual finish of colouring such as may be found in the most choice examples amongst florists' flowers.

— THE Spanish Oyster Plant, *Scolymus hispanicus*, is making its way as an esculent. It is more productive, crisper, sweeter, and better flavoured than Salsafy, and is cooked and served in the same way. It is cultivated like carrots, being sown in rows about 1 foot apart, and lifted for winter use. The plant would amply repay a more careful selection and culture than it has yet had.

— SOME interesting experiments bearing on the *Influence of Strange Pollen on the Form of Fruit* have been made by Maximowicz. The species experimented on were *Lilium davuricum* and *Lilium bulbiferum*. The pollen of each species was applied to the stigmas of the other species, the process being repeated upon several individual plants. The result was that the capsules borne by the several plants were found to have the form characteristic of the pollen parent; while the form of the seeds was intermediate between that of those of the two parents.

— A CHEAP, legible, and indestructible *Label for Trees, &c.*, has long been a *desideratum*; but it now appears to have been met by the new Shakspearian Imperishable Labels, made by Messrs. Bell and Thorpe, nurserymen, of Stratford-on-Avon. These are made of a white lustrous metal, which withstands the action of heat or cold, a dry atmosphere or a moist one, are particularly neat, and a marvel of cheapness, considering their indestructible character. A slight improvement might be made in their form, so as to give more firmness when set into the ground.

— M. PRILLIEUX has recently presented to the French Academy of

Sciences some observations on that very common malady, *Blister of the Peach Tree*, and which has been attributed at various times to the attacks of aphids, or to sudden alternations of temperature. Tulasne, however, discovered, some years since, the presence of a minute Fungus on the blistered leaves, which he called *Taphrina deformans* (*Ascomyces deformans* of Berkeley). The thecæ containing the spores present themselves almost exclusively on the upper surface of the leaf, the mycelium or spawn forming a very thin layer beneath the skin of the leaf, and consisting of minute oval, globular, or somewhat angular cells. From this mycelium proceed the asci or spore cases, each containing eight smooth spherical sporidia of extremely minute dimensions. These sporidia, when they escape from the asci, form a sort of white dust on the leaf. Each sporidium gives bud-spores, which multiply in their turn till a sort of chain is produced. If the mould does not produce spores it simply renders the leaves blistered, but when the sporidia are formed the leaf is thickened, as well as altered in form. M. Prillieux, while confirming the observations of M. Tulasne, has in addition determined the existence of a true mycelium or vegetative portion, the slender filaments of which spread even in the central cellular tissues of the leaf, and thereby cause the irregular multiplication of the constituent cells, the consequent thickening of tissue, and "puffing" of the leaf. The chlorophyll of the leaf disappears as the Fungus grows. Mr. Berkeley's assertions are thus confirmed by the French observers, and it is important to note this, as some of our microscopists have been inclined to doubt if the Fungus in question has any real connection with the disease. The best method of preventing the ravages of the disease is to pluck off the leaves and burn them.

— THE seeds of *Trillium* should be sown as soon as ripe in sandy loam and peat, covered lightly with soil, and then a thin stratum of sphagnum should be laid on the surface, to prevent alternations of drought. The pots are best placed in a cold frame. Home-grown seeds, if sown immediately they are ripe, generally germinate quickly; while imported seeds lie longer, often months, after sowing. When the plants appear, remove the sphagnum altogether; give plenty of water, to sustain growth as long as possible, and withhold it only when the foliage begins to colour-off, so that the growth may be perfectly matured, and not hastened. Winter the plants in a cold frame protected from frost. In spring they will start afresh, and if the compost is in a sound state, they may be allowed to make another season's growth in the seed-pots; otherwise, it is well to carefully prick them off into pots or pans, and treat them throughout the growing period to moderate heat and shade and constant humidity. In autumn they may be planted out in their permanent quarters.

— A VERY useful *Waterproof Translucent Paper* for screens, &c., may be formed by washing the paper (or a cotton fabric) over with a solution of gelatin or glue, to which one-fiftieth part by weight of the bichromate of potash is added; the material is thus rendered impermeable to water. The process must be carried out in full daylight. It is stated that the Japanese prepare their paper umbrellas in this way.

— THE charming *Fuchsia Sunray* is a silver tricolor variety, sent out by Mr. Milner, of Bradford, and proves to be a beautiful subject for conservatory decoration. The very beautiful foliage is boldly marked with a white variegation, and is also deeply flushed with red.

Obituary.

— THE Rev. EDWIN SIDNEY died on October 22, at the Rectory, Cornard Parva, near Sudbury, Suffolk, in the 75th year of his age. He was an active member of the Royal Institution, a popular and most successful lecturer on scientific subjects, and a devoted lover of horticulture. As an author he was known by his *Blights on the Wheat*, *Dialogues on Scientific Subjects*, &c. His warm heart and genial disposition endeared him to all who knew him; wherever he visited he made a friend of the gardener; and in his own parish, where he laboured for nearly a quarter of a century, he was universally beloved.

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